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CITY OF CAMBRIDGE

MASSACHUSETTS

ANNUAL REPORT

OF THE

School Committee

PREPARED BY THE

SUPERINTENDENT OF SCHOOLS

1892

CAMBRIDGE
HARVARD PRINTING COMPANY
1893

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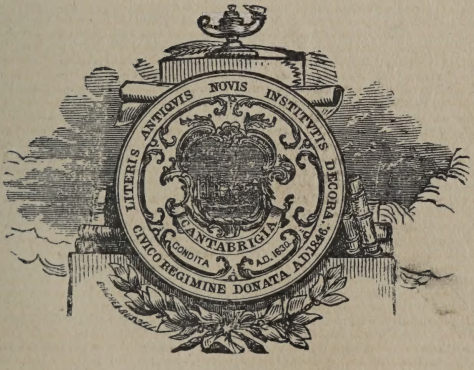

CAMBRIDGE
HARVARD PRINTING COMPANY
1893

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THE COLUMBIAN EXPOSITION.

In School Committee, June 2, 1892, *the following report was adopted:—*

"*The Committee on the Columbian Exposition, to which was referred the circular of the Massachusetts Committee on Instruction, reports that it does not deem it advisable to send an exhibit of the written work of pupils, but recommends that the exhibit consist of* (1) *a report, to be edited by the Superintendent, giving a history of the various departments of the Cambridge Public Schools, and* (2) *a collection of photographs of some of the school-houses past and present.*"

SANFORD B. HUBBARD,
Secretary.

REPORT

OF THE

SCHOOL COMMITTEE FOR 1892.

In compliance with Section 142 of the Rules and Regulations, the Superintendent herewith submits his eighteenth annual report for the year ending December 31, 1892.

Population of Cambridge.

1840	8,409	1870	39,634
1850	15,215	1875	47,838
1855	20,473	1880	52,699
1860	26,060	1885	59,658
1865	29,112	1890	70,028

School Census.

Number of children in the city on the first of May, five years old or more but less than fifteen, as reported by the Truant Officers.

1875	8,128	1884	10,682
1876	8,218	1885	10,957
1877	No census	1886	11,131
1878	8,422	1887	11,216
1879	8,885	1888	11,727
1880	9,390	1889	11,750
1881	9,582	1890	11,971
1882	10,370	1891	12,160
1883	10,490	1892	12,451

Schools and Class-rooms.

Latin School	1	Number of class-rooms	8
English High School	1	" " "	13
Grammar Schools	11	" " "	122
Primary Schools	21	" " "	111
Kindergartens	6	" " "	7
Evening Drawing Schools	2	" " "	7
Evening High School	1	" " "	6
Evening Elementary Schools	3	" " "	12
Whole number of Day Schools			40
Number of class-rooms for Day Schools			261

High School and Grammar School Houses.

School Houses.	Number of Class-rooms.	Estimated Value.	Size of Lots, sq. ft.	Estimated Value.	Total Value.
Latin	8*	$40,000	37,828	$15,900	$55,900
English High	11†	220,000	74,366	18,000	238,000
Allston	12‡	30,000	15,193	4,600	34,600
Corlett	2	3,000	10,000	1,000	4,000
Harvard	16‡	45,000	20,494	12,000	57,000
Morse	14‡	73,000	25,650	7,000	80,000
Peabody	6	27,000	21,813	7,000	34,000
Putnam	13‡	60,000	11,900	8,300	68,300
Shepard	11	30,000	14,755	7.000	37,000
Thorndike	12	30,000	10,027	4,000	34,000
Washington	12‡	25,000	14,951	7,000	32,000
Webster	16‡	50,000	25,839	9,000	59,000
Wellington	13‡*a*	42,000	27,673	8,300	50,300
Total	146	$675,000	310,489	$109,100	$784,100

*Also a library, a physical laboratory and an assembly hall.

†Also five recitation rooms, a library, a physical laboratory, a chemical laboratory, a lecture room, a drawing-room, and an assembly hall.

‡Also an assembly hall.

*a*On the same lot there is another school house containing four rooms used for primary classes.

Primary School Houses.

School Houses.	Number of Class-rooms.	Estimated Value.	Size of Lots, sq. ft.	Estimated Value.	Total Value.
Agassiz	7	$18,000	19,689	$6,000	$24,000
Boardman	8	12,000	10,018	4,000	16,000
Bridge	2	500	4,646	1,400	1,900
Cushing	2	3,000	14,787	1,000	4,000
Dana	4	2,000	14,317	4,300	6,300
Dunster	4	4,000	10,000	2,000	6,000
Felton	4	6,000	15,090	4,500	10,500
Gannett	4	12,000	15,434	3,000	15,000
Gore	12	25,000	9,900	4,000	29,000
Holmes	4	6,000	11,182	4,500	10,500
Lassell	4	8,000	10,000	2,500	10,500
Lowell	4	7,000	12,033	2,500	9,500
Otis	8	12,000	8,270	4,000	16,000
Quincy	2	10,000	8,469	5,000	15,000
Reed	4	4,000	12,000	1,200	5,200
Riverside	4	5,000	11,192	3,000	8,000
Sargent	4	3,000	9,995	4,000	7,000
Stearns	4	3,000	10,050	5,000	8,000
Tarbell	4	8,000	19,500	4,000	12,000
Willard	12	25,000	20,079	5,000	30,000
Wyman	6	6,000	14,347	3,000	9,000
Primary Total	107	$179,500	260,998	$73,900	$253,400
Grammar "	127	415,000	198,295	75,200	490,200
High Schools "	19	260,000	112,194	33,900	293,900
Summary	253	$854,500	571,487	$183,000	$1,037,500

Number of teachers in the Day Schools.

[Special teachers are included in the total.]

December.	Latin School.	English High School.	Grammar Schools.	Primary Schools.	Kinder-gartens.	Total.	Normal Gradu-ates.
1887	9	12	113	100	..	237	131
1888	10	12	115	102	..	241	155
1889	10	14	118	100	7	251	142
1890	10	15	121	101	11	263	146
1891	10	16	126	104	11	272	161
1892	10	19	131	106	12	284	166

Attendance at all the Day Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1875	9,411	7,167	6,527	91.
1880	8,537	7,175	6,614	92.2
1885	10,213	8,650	7,915	91.5
1890	11,914	10,089	9,325	92.4
1891	12,468	10,520	9,659	91.8
1892	12,845	10,861	9,959	91.7

Attendance at the Latin School.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1887	196	181	175	96.5
1888	247	228	217	95.1
1889	239	217	207	95.5
1890	224	204	199	96.4
1891	231	213	204	95.7
1892	238	213	203	95.4

Attendance at the English High School.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1887	351	318	302	95.1
1888	343	304	290	95.3
1889	397	345	331	96.1
1890	473	409	396	96.7
1891	552	480	464	96.6
1892	624	529	511	96.5

Attendance at the Grammar Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1887	5,334	4,628	4,317	93.3
1888	5,421	4,760	4,427	93.0
1889	5,602	4,864	4,517	92.9
1890	5,668	4,891	4,557	93.2
1891	5,793	5,052	4,701	93.1
1892	5,891	5,175	4,803	92.8

Attendance at the Primary Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1887	5,276	4,301	3,877	90.1
1888	5,485	4,465	4,031	90.3
1889	5,617	4,537	4,086	90.0
1890	5,321	4,403	4,011	91.1
1891	5,499	4,481	4,065	90.7
1892	5,697	4,650	4,203	90.4

Attendance at the Kindergartens.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1890	228	183	163	89.6
1891	393	294	225	76.7
1892	395	294	239	81.2

Number graduated from, and admitted to, the High Schools.

Year.	Latin School. Course, 5 years.	Admitted to Latin School.	English High. Course, 4 years.	Admitted to English High.
1892	22	85	52 and 25*	230 and 85†
	Average age, 18 yrs. 1 mo.	Average age, 14 yrs. 7 mos.	18 yrs. 9 mos. 18 yrs. $\frac{1}{4}$ mo.*	15 yrs. 3 mos. 15 yrs. 3 mos.†

* Manual Training School. Course, 3 years. † Manual Training School Class.

Number graduated from the Grammar and Primary Schools.

Year.	Gram'r Schools. Course, 6 years.	Average age of Graduates.	Primary Schools. Course, 3 years.	Average age of Graduates.
1892	536*	15 yrs. $\frac{4}{5}$ mos.	1,146†	9 yrs. 10 mos.
	* 10% in 4 years, 27% in 5 years, 45% in 6 years, 18% in 7 years.		† 5% in 2 years, 66% in 3 years, 20% in 4 years, 9% in 5 years.	

Number of pupils in the Latin School, December, 1892.

Grade.	Boys.	Girls.	Total.	Per cent.
Fourteenth	19	14	33	.126
Thirteenth	22	18	40	.153
Twelfth	28	17	45	.172
Eleventh	29	30	59	.225
Tenth	53	32	85	.324
Total	151	111	262	

Number of pupils in the English High School, December, 1892.

Grade.	Boys.	Girls.	Total.	Per cent.
Thirteenth	23	55	78	.127
Twelfth	46 (30)*	61	107	.174
Eleventh	65 (32)*	81	146	.239
Tenth	141 (79)*	141	282	.460
Total	275 (141)*	338	613	

* Manual Training School.

Number of pupils in the Grammar Schools, December, 1892.

Grade.	Boys.	Girls.	Total.	Per cent.
Ninth	223	304	527	.096
Eighth	313	345	658	.120
Seventh	431	398	829	.151
Sixth	470	496	966	.176
Fifth	532	536	1,068	.195
Fourth	716	719	1,435	.262
Total	2,685	2,798	5,483	

Number of Pupils in the Primary Schools, December, 1892.

Grade.	Boys.	Girls.	Total.	Per cent.
Third	664	571	1,235	.255
Second	788	717	1,505	.311
First	1,114	985	2,099	.434
Total	2,566	2,273	4,839	
Kindergartens	140	174	314	

Number of pupils belonging to the Evening Drawing Schools with the average attendance.

1887.	1888.	1889.	1890.	1891.	1892.
234	216	228	166	188	219
107	101	120	106	110	127

Number of pupils belonging to the Evening Schools with the average attendance.

1887.	1888.	1889.	1890.	1891.	1892.
311	356	425	739	1,020	1,013
124	149	181	298	362	329

Number of pupils in the Private Schools in Cambridge including those in the Parochial Schools.

1887.	1888.	1889.	1890.	1891.	1892.
1,651	1,785	2,037	2,050	2,127	2,235

Cost of Instruction in the Evening Schools.

Year.	Elementary.	High.	Drawing.	Total.
1887	$932 00	Opened Jan. 3, 1889.	$1,000 00	$1,932 00
1888	1,058 00		1,350 00	2,408 00
1889	1,247 00	$855 00	1,230 00	3,332 00
1890	1,513 00	1,260 00	546 00	3,319 00
1891	1,851 50	1,191 25	867 00	3,909 75
1892	1,827 50	1,226 25	1,157 00	4,210 75

Summary of the School Census, as taken by the Truant Officers, May, 1892.

[The Statutes make it the duty of the School Committee to ascertain annually the names and ages of all persons between the ages of five and fifteen years, belonging in their respective towns and cities on the first day of May.]

Number of children in the city five years old or more, but less than fifteen	12,451
Number in Public Schools five years old or more, but less than fifteen	10,088
Number in Public Schools fifteen years old or more, as shown by the school register	1,180
Number in Private Schools five years old or more, but less than fifteen	1,428
Number not attending school five years old or more, but less than eight	587
Number not attending school eight years old or more, but less than fourteen	176
Number not attending school fourteen years old or more, but less than fifteen	172
Whole number not attending school five years old or more, but less than fifteen	935
Number in the city five years old or more, but less than six	1,116
Number in the city eight years old or more, but less than fourteen	7,668

Finances.

[For the financial year ending Dec. 1, 1892.]

Cost of instruction in day schools	$207,144 22
Cost of instruction in evening schools	4,210 75
Cost of care and repairs of school houses (day schools)	46,191 39
Cost of care of school houses (evening schools)	1,938 00
Cost of text-books and supplies	12,420 34
Incidental expenses	895 07
Expended on English High school house	65,358 11
Expended on Latin school house	18,395 35
Expended on Wellington school house	8,550 00
Total expenditures for all school purposes	$365,103 23
Deducting receipts from the Hopkins Fund ($772.57) and for tuition of non-resident pupils ($965.50), actual cost of the schools to the city	$363,365 16
Assessed value of real and personal estate, May, 1892	$74,240,095 03
Ratio of expenses for school purposes to the valuation of 1892	.0049

Cost of Instruction in the Day Schools.

[Salaries of teachers, superintendent, agent, and truant officers.]

Year.	Number of Teachers January 1.	Average Number of Pupils.	Whole Cost.	Cost per Pupil.
1876	176	7,066	$164,818 00	$23 32
1878	173	7,028	136,491 20	19 42
1880	182	7,175	130,371 75	18 17
1881	192	7,434	132,501 10	17 82
1882	200	7,898	137,328 55	17 38
1883	212	8,194	144,457 60	17 63
1884	216	8,414	152,290 62	18 09
1885	224	8,650	158,640 13	18 33
1886	233	9,218	165,277 42	17 92
1887	237	9,429	172,135 06	18 25
1888	241	9,756	175,773 80	18 02
1889	251	9,962	180,816 26	18 15
1890	263	10,089	190,558 21	18 89
1891	272	10,520	196,938 70	18 72
1892	284	10,861	207,144 22	19 07

Cost of the Day Schools.

[The expenditures for new school houses are not included.]

Year.	Number of Teachers January 1.	Average Number of Pupils.	Whole Cost.	Cost per Pupil.
1876	176	7,066	$200,894 09	$28 43
1878	173	7,028	162,437 77	23 11
1880	182	7,175	153,967 56	21 45
1881	192	7,434	158,282 84	21 29
1882	200	7,898	166,230 52	21 04
1883	212	8,194	177,149 93	21 62
1884	216	8,414	203,234 56	24 15
1885	224	8,650	206,806 09	23 90
1886	233	9,218	207,536 46	22 51
1887	237	9,429	222,679 19	23 61
1888	241	9,756	225,408 57	23 10
1889	251	9,962	229,421 31	23 03
1890	263	10,089	241,980 84	23 98
1891	272	10,520	249,491 67	23 71
1892	284	10,861	266,651 02	24 55

Statistics taken from the Fifty-sixth Annual Report of the Secretary of the State Board of Education.

Number of cities and towns: cities, 30; towns, 322	352
Number of public schools	7,336
Number of pupils of all ages in the public schools during the year	383,217
Number of persons over fifteen years of age attending the public schools	35,090
Per cent of attendance based upon the average membership	90
Number of persons employed as teachers in the public schools during the year: men, 992; women, 9,973; total	10,965
Number of teachers who have graduated from Normal Schools	3,267
Average number of months the public schools have been kept for the entire year	8.11
Number of High Schools	245
Number of teachers in High Schools	904
Number of pupils in High Schools	27,482
Amount expended upon the public schools, exclusive of the expense of school buildings	$6,668,691 00
Cost of new school houses, permanent improvements, and ordinary repairs	2,646,865 00
Entire expenditure for public school purposes	$9,315,556 00

Special Institutions.

The following are the statistics of the attendance and expenses of the Massachusetts pupils in the several schools for the deaf, the blind, and the feeble-minded.

AMERICAN ASYLUM AT HARTFORD, CONN.

Number of Massachusetts beneficiaries, 1891–92	74
Paid for these pupils	$11,643 00

CLARK INSTITUTION, NORTHAMPTON.

Number of Massachusetts beneficiaries, 1891–92	94
Paid for these pupils	$15,940 00

HORACE MANN SCHOOL, BOSTON.

Number of Massachusetts beneficiaries, 1891–92	101
Paid for these pupils	$11,623 00

PERKINS INSTITUTION FOR THE BLIND.

Number of Massachusetts beneficiaries, 1891–92	99
Annual appropriation from the state	$30,000 00

SCHOOL FOR THE FEEBLE-MINDED, WALTHAM.

Number of Massachusetts beneficiaries, 1891–92	142
Annual appropriation from the state	$25,000 00

TABULAR VIEW.

JANUARY 1, 1893.

Prepared by the Secretary of the School Committee.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1893.
Latin	William F. Bradbury	$3,000	262
	Theodore P. Adams	2,000	
	Charles W. Parmenter	1,500	
	Helen M. Albee	950	
	Charlotte C. Barrell	950	
	Caroline Drew	570	
	Mary C. Hardy	875	
	Margarette M. Leighton	950	
	Emma M. Sawyer	950	
	Jennie S. Spring	950	
	Annie S. Dodge*	200	
English High	Frank A. Hill	3,000	613
	Edwin L. Sargent	2,000	
	Charles F. Warner	2,000	
	Joseph A. Coolidge	1,000	
	Harriet E. Bird	1,050	
	Clara A. Armes	950	
	Caroline Close	950	
	Grace L. Deering	950	
	Myra I. Ellis	1,000	
	Maud A. Lawson	750	
	Henrietta E. McIntire	600	
	Mary Moulton	950	
	Louisa P. Parker	1,000	
	Caroline A. Sawyer	950	
	Emma A. Scudder	950	
	Martha R. Smith	950	
	Maria E. Spare	950	
	Delia M. Stickney	1,050	
	Anna M. Warren	500	
	Martha L. Babbitt*	500	
Allston	Benjamin W. Roberts	2,000	590
	Mary I. Vinton	700	
	Susan M. Adams	620	
	Sara A. Bailey	620	
	Mary Blair	620	
	Mary M. Brigham	620	
	S. Alice Fell	620	
	Evelyn B. Kenny	620	
	Ada M. Litchfield	470	
	S. Agnes Mulloney	620	
	Emily R. Pitkin	620	
	Elizabeth M. Ricker	620	
	Ida G. Smith	620	
	Caroline M. Williams	620	

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*Secretary and Librarian.

Tabular View — *continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1893.
Harvard	James S. Barrell	$2,000	734
	Arthur A. Lincoln	1,200	
	Ada H. Wellington	700	
	Margaret B. Wellington	700	
	Addie L. Bartlett	520	
	Theresa C. Bartlett	620	
	Elizabeth L. Buckley	570	
	Mary F. Emerson	620	
	Frances Fabyan	620	
	Estella J. French	620	
	Eliza S. Getchell	620	
	Isabella H. Howe	620	
	Melissa M. Lloyd	400	
	M. Florence McGlashan	620	
	Louise C. Patterson	520	
	Annie M. Street	620	
	Emma F. West	470	
	Hortense O. Young	620	
Morse Grammar Primary	Mary A. Townsend	1,600	366 146
	Mary E. Towle	700	
	Elizabeth J. Baldwin	620	
	Mabel L. Chamberlain	520	
	Stella L. Cotton	400	
	Marie B. Daniel	470	
	Mary M. Delamaria	620	
	Ellen M. Dewing	620	
	Annie M. Dow	620	
	Lucy A. Hall	570	
	Emily Richardson	620	
	Marcia E. Ridlon	570	
	Mary E. Sawyer	620	
	Gertrude D. Sprague	470	
Peabody	Frederick S. Cutter	1,800	283
	Addie F. Cleary	700	
	Susan Allison	570	
	Anna F. Bellows	620	
	Abbie L. Chapman	620	
	Charlotte A. Ewell	620	
	Florence E. Frost	620	
Putnam	Thomas W. Davis	2,000	611
	Charles C. Price	1,000	
	Eliza M. Hussey	700	
	Ella R. Avery	620	
	Annetta Bruce	620	
	Mary A. Carmichael	570	
	Lydia B. Collier	620	
	Sarah M. Grieves	620	
	Annie B. Joselyn	620	
	Louise A. Keeler	620	
	Augusta G. Mirick	620	
	Eliza S. Paddack	620	
	Louise A. Stickney	620	
	Mary M. Sullivan	620	

Tabular View — *continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1893.
Shepard	Edward O. Grover	$2,000	559
	Nellie A. Hutchins	700	
	Mabel E. Blake	620	
	Harriet V. Dever	620	
	Emma A. Falkner	620	
	Emily F. Fessenden	620	
	Harriet Foster	620	
	Ellen J. Hunt	620	
	Gertrude Hunt	620	
	A. Estelle Ingraham	620	
	Flora C. Ingraham	620	
	Evelyn J. Locke	620	
Thorndike	Ruel H. Fletcher	2,000	554
	Harriet A. Townsend	700	
	Isabel R. Blackman	400	
	Grace W. Fletcher	620	
	Emma A. Hopkins	620	
	Abby A. K. Howard	620	
	Elizabeth G. Hutchison	620	
	Martha A. Martin	620	
	Mary E. Nason	620	
	S. Louise Regal	620	
	Abby S. Taylor	620	
	Laura A. Westcott	620	
	Lydia A. Whitcher	620	
Washington	John W. Freese	2,000	508
	Annie E. Whittier	700	
	Eldora J. Clark	620	
	Lucy A. Downing	620	
	Mary L. Ells	620	
	Alice P. Fay	620	
	Ellen A. Kidder	520	
	Winifred L. Kinsley	620	
	Margaret J. Penney	620	
	Hattie Shepherd	620	
	Mary E. Stiles	620	
	Abby M. Webb	620	
	Marion J. Wendell	400	
Webster	John D. Billings	2,000	679
	Melzar H. Jackson	1,000	
	Alice C. Phinney	700	
	Martha N. Hanson	700	
	Ada A. Billings	620	
	Ella E. Buttrick	620	
	Charlotte M. Chase	620	
	Susan I. Downs	620	
	Anna M. Ford	620	
	Helen M. Joyce	620	
	Edith M. Keith	520	
	M. Josephine Lamprey	620	
	Anna S. Lamson	620	
	Gertrude A. Long	620	
	Ruth D. Loring	520	
	Minnie V. Reid	620	
	Harriette E. Shepard	520	

Tabular View — *continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1893.
Corlett	Fannie P. Browning	$630	69
	Mary L. Gamwell	620	
Agassiz { Grammar Agassiz { Primary	Maria L. Baldwin	700	115 187
	Mary G. Carpenter	620	
	Amy Greaves	400	
	Rosina C. Karcher	620	
	Jennie Lyle	570	
	Minnie A. Noyes	620	
	Mary A. Parsons	470	
Boardman	Mary A. Lewis	660	371
	Christine R. Denyven	620	
	Alice Gregg	620	
	Nellie E. Hastings	620	
	Elizabeth J. Karcher	620	
	C. Florence Smith	620	
	Sarah E. Stewart	620	
Bridge	Emily C. Dallinger	630	81
	Mary M. Bucknam	620	
Cushing	Isadore I. Foster	630	75
	Ida B. Holt	620	
Dana	Maria F. Williams	640	157
	Emily J. Allen	620	
	Abby A. Lewis	620	
	Georgia E. Martin	470	
Dunster	Susan E. Wyeth	640	147
	Mary M. Burnham	470	
	Mary E. Colby	620	
	Isabel Foster	620	
Felton	Florence A. Rogers	640	203
	S. Emma Davis	470	
	Minnie F. Munroe	620	
	Carrie H. Smith	620	
Gannett	Sarah J. A. Davis	640	160
	Anna M. Jones	620	
	Mary A. Rady	620	
Gore	Frances E. Pendexter	680	587
	Anna E. Callahan	620	
	Addie H. Dale	520	
	Elizabeth B. Gahm	620	
	Anna M. Keough	470	
	Katherine L. McElroy	620	
	Mary C. McNally	620	
	Mary E. Mulloney	620	
	Anastasia Peters	400	
	Emma J. Ross	620	
	Jane E. Whoriskey	400	
Holmes	Marianne M. Webb	630	80
	Ellen M. Cyr	620	
Lassell	Ellen F. Ball	640	192
	Rose V. Collier	620	
	Cora A. Reycroft	620	
	Frances E. Whoriskey	620	
Lowell	Lucy E. Cyr	640	133
	Malvina Joslin	520	
	Agnes J. McElroy	470	

Tabular View — *continued.*

Names of Schools.	Teachers.	Salaries.	No. of Pupils Jan. 1, 1893.
Otis	Ellen N. Leighton	$660	363
	Frances Allen	620	
	Bridget T. Boyle	400	
	Martha H. Butler	620	
	Josephine M. Doherty	620	
	Luella M. Marsh	620	
	Ellen C. Walsh	620	
	Kate F. Wellington	620	
Quincy	Charlotte E. Jewell	630	85
	Lucy C. Wyeth	620	
Reed	Margaret Kidd	640	192
	Margaret T. Burke	620	
	Harriet N. Keyes	620	
	Julia A. Robinson	620	
Riverside	Elizabeth A. Tower	640	132
	Amanda M. Alger	620	
	Mary A. Burke	620	
Sargent	Mary A. Brown	640	209
	Christina D. Barbey	620	
	Fanny C. Hartwell	620	
	Ella M. Leaver	620	
Stearns	Helen M. Ward	640	189
	Maria J. Bacon	620	
	Ellen A. Cheney	620	
	Eva A. Taylor	620	
Tarbell	Emma J. Young	640	159
	Florence J. Alley	400	
	Ellen F. McCarthy	620	
	Carrie P. Pierce	520	
Willard	Amelia Wright	680	465
	Sally N. Chamberlain	620	
	M. Elizabeth Evans	620	
	Ella F. Gulliver	620	
	Julia S. Gushee	620	
	Mary E. G. Harrington	620	
	Louise W. Harris	620	
	Katherine M. Lowell	620	
	Emma C. Otis	620	
	Eliza D. Watson	620	
	Grace R. Woodward	620	
	Laura Wright	620	
Wyman	Fannie E. M. Dennis	645	293
	Addie M. Bettinson	620	
	M. Carrie Dickman	620	
	Georgianna B. Dutcher	620	
	Geneveive S. Flint	400	
	Mary M. Gilman	620	
Wellington Grammar Primary	Herbert H. Bates	2,000	415 233
	Susan G. Lumbert	800	
	Sarah J. Gunnison	800	
	Training Class	4,000	
Kindergartens. Boardman	Mabel S. Eddy	620	56
	Grace Mulloney	480	

Tabular View — *continued.*

Names of Schools.		Teachers.	Salaries.	No. of Pupils Jan. 1, 1893.
Kindergartens.	Dunster	Helen Willson	$620	43
		Clara A. Hall	400	
	Riverside	Ellen I. Hutchison	620	58
		Martha Adams	480	
	Moore Street	Harriette E. Ryan	620	57
		Mary Stewart	440	
	Gore	Selma E. Berthold	620	55
		Mary Burnett	480	
	Lowell	Melinda Gates	620	45
		Alice S. Brown	480	
Teachers of Sewing		Agnes Gordon	600	
		Georgia A. Jones	600	
Director of Drawing		Walter F. Brackett	1,700	
Director of Music		Frederick E. Chapman	1,700	
Truant Officers		Moses M. Child	900	
		Francis M. Mason	900	
		John Collier	900	
		John Carmichael	700	

SUPERINTENDENT — Francis Cogswell	$3,000
SPECIAL PRIMARY TEACHER — Lelia A. Mirick	1,000
AGENT — Sanford B. Hubbard	1,700
CLERK — Althea B. Frost	500

The Wellington School is a training school, composed of grammar and primary pupils taught by young ladies, graduates of Normal Schools and candidates for the position of teacher, under the direction and with the assistance of the master of the school and his assistants.

Temporary assistants and members of the Training Class are counted as eight teachers, the sum of their salaries being about equal to the amount paid to that number of regular teachers.

The Post Office addresses of the several schools are as follows:

CAMBRIDGE — English High, Peabody,* Washington,* Agassiz, Dunster, Holmes, Lowell, Quincy, Riverside.

CAMBRIDGEPORT — Latin, Allston,* Harvard,* Morse,* Webster,* Boardman, Bridge, Dana, Felton, Gannett, Sargent, Stearns, Tarbell, Wellington,* Willard.

EAST CAMBRIDGE — Putnam,* Thorndike,* Gore, Lassell, Otis.

NORTH CAMBRIDGE — Shepard,* Reed, Wyman.

MOUNT AUBURN — Corlett,* Cushing.

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* Grammar Schools.

Summary.

Number of pupils in Latin School	262
Number of pupils in English High School	613
Number of pupils in Grammar Schools	5,483
Number of pupils in Primary Schools	4,839
Number of pupils in Kindergartens	314
Total	11,511
Number of pupils belonging to the Public Schools, Jan. 1, 1892	11,301
Increase	210
Average annual increase of pupils, from 1860 to 1880 (inclusive)	219
Increase of pupils, 1881	403
Increase of pupils, 1882	448
Increase of pupils, 1883	280
Increase of pupils, 1884	165
Increase of pupils, 1885	589
Increase of pupils, 1886	267
Increase of pupils, 1887	371
Increase of pupils, 1888	173
Increase of pupils, 1889	249
Increase of pupils, 1890	368
Increase of pupils, 1891	222
Increase of pupils, 1892	210
Number of Schools	40
Number of School-rooms	261
Number of Teachers	284

Cost of Instruction.

Latin School	$12,751 07	For each pupil	$48 66
English High School	20,488 50	“ “ “	33 42
Training School	7,951 00	“ “ “	12 27
Grammar Schools	86,393 50	“ “ “	15 75
Primary Schools	60,337 90	“ “ “	12 47
Kindergartens	6,112 25	“ “ “	19 46
Teachers of Sewing	1,350 00		
Director of Music	1,560 00		
Director of Drawing	1,700 00		
Superintendent	3,000 00		
Agent	1,700 00		
Clerk	500 00		
Special Teacher in Primary Schools	600 00		
Truant Officers	2,700 00		
	$207,144 22	For each pupil	18 00

Cost of instruction in Evening High School	$1,226 25
Cost of instruction in Elementary Evening Schools	1,827 50
Cost of instruction in Evening Drawing Schools	*1,157 00
	$4,210 75

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* The Director of Drawing is principal of these schools. No part of his salary is included in this amount.

Remarks on the Statistics.

The increase over the last school year in the number of pupils registered is 377; in the average number belonging, 341; in the average daily attendance, 300. In the per cent of attendance there has been a decrease of one-tenth of one per cent. The number belonging to the schools in December, 1891, was 11,301; in December, 1892, 11,511; an increase of 210. The entire cost of the day schools, excluding the expenditures for new school houses and new furniture, exceeds that of last year by $17,159.35, and the cost per pupil by 84 cents. In the entire cost of instruction the increase is $10,205.52; an increase in the cost per pupil of 35 cents. While Cambridge expends a large amount for her schools, there are *two hundred and thirty-one* towns and cities in the State which make a larger expenditure in proportion to their wealth. In a list of the thirty cities, arranged numerically according to the percentage of their taxable property appropriated to the support of public schools for the year 1891–92, Cambridge is the *nineteenth*, and compared with the fifty-four towns and cities of our county, Cambridge is the *thirty-sixth*. In a list of the towns and cities of the State, arranged numerically according to the sum appropriated for each child between five and fifteen years of age, Cambridge is the *forty-second*.

These statistics relating to the schools of the State are taken from the Fifty-sixth Annual Report of the Secretary of the Board of Education.

Text-Books and Supplies.

At the meeting of the Board in December, the Committee on Supplies submitted a detailed report of the expenditures of that committee for the year.

This report was accepted, and it was voted that it be incorporated in the annual report of the School Committee. The report, with the omission of the names of the firms and individuals among whom the expenditures were divided, is as follows:

"The Committee on Supplies begs leave to submit the following report of its doings for the school year ending July 1, 1892; it being the eighth annual report of this Committee to the Board: —

Stock on hand July 1, 1891	$2,085 09
Purchases and expenditures to July 1, 1892	13,512 80
Total	$15,597 89

Amount brought forward		$15,597 89
Delivered to the Overseers of the Poor	$8 97	
Sold for cash to pupils	130 87	
Delivered to Schools and Officers	13,102 75	
		13,242 59
Stock on hand July 1, 1892		$2,355 30

The purchases and expenditures have been:

For text-books	$5,161 40
Desk and reference books	358 40
Drawing and writing books	1,048 97
Apparatus and furnishings	1,623 96
Miscellaneous supplies	4,245 70
Printing ($268.05); expressage ($369.90)	637 95
Diplomas ($204.93); repairing books ($218.49)	423 42
Tuning pianos ($13.00)	13 00
	$13,512 80

Deducting from the value of books and supplies delivered to Schools and Officers, as above		$13,102 75
The sales in the High Schools	$84 55	
The damages collected	48 12	
And profit on sales from the office	10 87	
		143 54
We have, net cost of all Schools and Officers		$12,959 21

or an average cost, per pupil, of $1.147 against $1.248, for the year 1891; $1.334 for the year 1890; $.960 for the year 1889; $1.068 for the year 1888; $1.051 for the year 1887; $1.17 for the year 1886; and $1.88 for the year 1885. The average cost per pupil per annum for seven years has been $1.232.

The cost of each grade of schools for text-books and supplies is as follows: —

	Net Expense.	Average per Pupil.				
		1892.	1891.	1890.	1889.	1888.
High Schools...............	$3,079.92	$3.826	$3.855	$5.362	$4.054	$3.944
Grammar Schools	4,453.15	.969	1.231	1.618	1.071	1.367
Mixed Schools.............	3,320.45	2.398	1.203	.985	.746	.953
Primary Schools...........	588.13	.140	.503	.286	.276	.240
Kindergartens	100.28	.316	.648	....	....	....
Evening Schools	488.41	....	....	....	....	....
Special Teachers. Sewing ...$63.68 Music .....52.00 Drawing..200.91	316.59	....	....	....	....	....
Miscellaneous expenses(not chargeable to any grade)	612.28	....	....	....	....	....
	$12,959.21	$1.147	$1.248	$1.334	$.960	$1.068

During the year ending July 1, 1892, the Morse school was furnished with a large amount of supplies, including desk and reference books in the various rooms, and, since this school has both grammar and primary grades, there appears an unnatural increase in the expenditure for mixed schools and a corresponding decrease in those for grammar and primary schools which prevents making any intelligent comparison with the expenditures of last year. No new kindergarten was established during the year, nor was there a new evening school opened; consequently the cost of maintaining these two departments was very much less than the previous year. The removal to the new English high school building occasioned some extra purchases, and for the chemical and physical laboratories additional apparatus was provided, in accordance with a vote of the School Board.

By request of the Mayor, a list and appraisal of all the books, including text-books, apparatus, and supplies in the custody of this committee, whether in the store-room or in the several public schools, was made as of Sept. 1, 1892, with the following result: —

Cost of text-books, desk and reference books, and apparatus now in the public schools, purchased under the "Free Text-Book Law"	$40,345 41
Estimated value Sept. 1, 1892	$22,199 05
Value, at cost, of supplies in store-room	1,786 41
Total valuation	$23.982 46

THIS SPECIAL REPORT.

For more than fifty years the reports of the School Committee of Cambridge have been printed. These reports not only contain information about the schools, but they are rich in the discussion of educational questions. In preparing this special report it is the purpose of the Superintendent to select from the printed reports such information as shall be of present interest and of permanent value. This report will also contain, in addition to the statistics and information usually given, various papers prepared by persons interested in the schools.

Instead of making a collection of photographs of several of the school-houses, as was originally intended, it has been thought best to insert cuts of them in this report.

GRADES AND CLASSIFICATION.

In the report for 1840 we read that "the entire number of public schools in Cambridge is nineteen, divided by a system of gradation into five classes, namely, alphabet, primary, middle, grammar, and high school." This gradation continued until 1863, when the middle schools were consolidated with the grammar schools, and the alphabet schools with the primary. The report for that year says: "By this arrangement it is hoped that much time will be saved, and it is certain that none can be lost, as before was done, in passing from the first to the second grade, and from the third to the fourth. But to secure all the improvement that is desired, it is necessary that all the scholars should be promoted as rapidly as possible, and that the brighter ones should never be allowed, still less compelled, to wait for the regular promotion of the class. If the teachers understand that their success will be estimated more by the number of the promotions which have been made from their classes than by the appearance of those who are left on examination day, they will be encouraged to urge their pupils on faster. And by urging we mean no injurious pressure. A brisk and lively march straight onward is much healthier for the children than dull lagging, with much repetition of a too familiar round which has nothing to task the mind or stimulate the curiosity."

"Besides reducing the number of grades in the inferior schools, the committee have introduced a uniform classification, dividing all the grammar schools into six classes, and the primary into four, besides the alphabet class. For each class in these schools they have prescribed a definite course of study, so that henceforth the degree of advancement of the children in any class will be nearly the same at the same time in all the schools."

It appears that at this time (1863) the primary schools were divided into five classes, and that the pupils spent from four to five years in doing the required work. In 1870, however, a plan of study was adopted covering a period of three years, and from that time to the present no change in the classification of these schools has been made, except in the names of the classes or grades. By the rules adopted September, 1890, instead of calling the highest class in the primary and the grammar schools the *first class*, as formerly, the lowest class in the primary schools is called the *first grade*, and in the grammar schools the *fourth grade*, the highest class in the primary schools being the *third grade*, and in the grammar schools the *ninth grade*. In March, 1886, the Classical and English departments of the high school were made two separate schools. In the Latin school there are five grades, in the English high school four; and the highest class in each school is called the *first class*. In September, 1889, the kindergartens, established and maintained for eleven years by Mrs. Quincy A. Shaw, were adopted as a part of our school system.

Important changes in the classification of the grammar schools and in the course of study were made at the beginning of the school year in 1892. A full account of these changes is given in this report under the headings, "Enriching the Course of Study" and "The Cambridge Experiment."

HIGH SCHOOLS.

The school report for 1846 contains the following: "It is hoped that the proposed arrangement of one high school for the whole city, in some central location, will go into operation as soon as practicable, and that then the high school of Cambridge will be furnished with all the means requisite to a complete high school education. Hitherto our high schools have had no libraries and almost no apparatus, and, being two or three in number and *mixed* in character, they have not possessed the advantages which a school of this grade deserves. If it is settled, as we suppose it is, that there shall be one, and only one high school for the whole city, the sooner a suitable building is erected and fitted up for the purpose the better. We can see inconvenience and loss, but no advantage, from a delay. Indeed it is difficult, under present circumstances, to give our children that complete English education and that thorough Classical instruction which the standing of Cambridge and its schools would justly lead our citizens to demand."

From the "History of the Cambridge High School" we learn that in 1838 a classical or high school was established for the whole town, and that a building was erected for it at the corner of Winsor street and Broadway. This location, it appears, was not found convenient for the population. Classical instruction was, therefore, in 1843, reëstablished in the grammar school in Old Cambridge. It was also given in East Cambridge in the Otis School, and was continued in the high school at the Port. After a trial of this plan for four years, a high school for the whole city was again organized in the autumn of 1847, in the high school house originally built for this purpose in 1838; but high school instruction was continued in the grammar school in Old Cambridge until the following year.

In 1848, a new building was erected on Amory street, and here the school remained until its removal in 1864 to the school house built for it on Fayette street. This was its home for more than twenty years, but during the latter part of the period it became necessary to occupy two or three rooms in other school buildings.

March 1, 1886, the Classical and English departments were made two separate schools, called, respectively, "The Cambridge Latin School," and "The Cambridge English High School." The former was removed to a building provided for it on Lee street, and the latter remained in the old home on Fayette street.

During the years 1890 and '91 a new building was erected for the English high school on Broadway between Ellery and Trowbridge streets. It was occupied by the school, February 12, 1892. The school house on Fayette street has been remodelled, and is now occupied by the Latin school. A description of the new building and of the alterations in the old building is given in this report.

GRAMMAR SCHOOLS AND PRIMARY SCHOOLS.

There are eleven grammar schools and twenty-one primary schools in Cambridge. The number of pupils in these schools at the present time is between ten and eleven thousand, and the number of teachers is two hundred sixty-two. The changes which have taken place in the schools since 1854 were briefly stated by the superintendent at the dedication of the Putnam school-house two years ago, as follows:—

During the thirty-six years since my connection with the schools of Cambridge many changes have taken place. It has seemed to me not inappropriate that I take this occasion to speak of some of these changes. We are here to-day to dedicate this building, but since I came to Cambridge every school-house in this ward, and, with the exception of eight, every school-house in the city has been built, and of the eight, four have been entirely changed in their interior arrangement. Besides the school-houses now occupied, we have two in process of erection, which, when completed, will be among the best in the State. When I came there were sixty-two teachers connected with the schools, only four of whom remain in service; now (1890) there are more than two hundred and sixty-two (270). Then there were 2,700 pupils; now there are nearly 11,000. In the year 1853 the cost of instruction was a little less than $25,000; last year it was over $180,000. It will be noticed that the percentage of increase in the cost of instruction is larger than in the number of pupils. There are two reasons for this — the salaries have been increased, and the number of pupils to a teacher diminished. In the report for 1857, I read that " Miss ——— has shown remarkable capacity for one of the most difficult positions, with over a hundred pupils in attendance "; in that for 1858, this is found, " For a slender young lady to instruct, as well as govern, more than a hundred pupils with admirable success, is more than ought to be expected." No one to-day would consider it wise economy to have more than one-half this number under the instruction of one teacher. As a matter of fact, the statutes limit the maximum number to fifty. In regard to the increase of salaries, I will say that since the report of the committee on salaries in 1879, which showed that the increase in that respect had not been out of proportion to that in all other departments of service, it has not been thought by persons familiar with that report that the teachers have been paid too much.

In the organization of the schools and the methods of instruction and discipline, there have been equally marked changes. Until 1863 the schools were divided into alphabet, primary, middle, grammar, and high. At that time the number of grades was reduced from five to three by uniting the middle schools with the grammar schools, and the alphabet with the primary. This organization was continued until the division of the high school; soon after which a connection was formed between the manual training school, established and maintained by Mr. Rindge, and the English high school; and more recently kindergartens have been incorporated into the school system. In what I shall say, let me not be understood to imply that the schools of Cambridge thirty-six years ago were not in good condition; on the contrary, I believe they were unsurpassed in excellence by any schools in the State. It could not be otherwise with such men to direct them as had been upon the board of school committee for many years. Recently I have read with great interest several of the early reports. The first one that was printed, so far as I was able to learn, was written fifty years ago, by him whose voice we heard in the opening exercise, invoking the Divine blessing (Rev. A. B. Muzzey, D. D.) No report written at the present time could be more suggestive and helpful to teachers. It contains sentiments which would enrich any educational volume.

The more important changes that have taken place in the work and management of the schools have been along these lines — more objective teaching, more attention to the subject of language, the widening of the range in reading, which includes the connection between the public library and the schools, the teaching of music so as to enable pupils to read music as well as to sing, and the disuse of the rod as a means of discipline. It was an epoch in the history of the schools when in 1870, under the superintendency of Mr. Hale, a change was made in the course of study and methods of instruction in the primary schools. Up to that time nothing of number was taught until the child reached the second class, and then the instruction was chiefly, if not wholly, of an abstract character. The pupil was taught to read figures, but did not learn to make them until he entered the grammar grade. In fact, slates were not in use in the primary schools, and of course slate exercises, such as drawing, printing, writing, etc., were not a part of the primary work. To-day the writing of children in the primary schools can be more easily read than half the letters I receive at my office. Examples in division and multiplication containing three or four figures are readily performed. The reading from a particular book may not be so good as formerly, but the child can read from one book, if suited to his attainments, as well as from another. About the same time a systematic plan of sentence-writing was introduced into the grammar schools. This plan included the writing of simple sentences for the lower classes; of letters and business forms for the middle classes, and of compositions for the higher classes. As a rule, the pupils in the middle classes are now able to express their thoughts more fluently and with fewer errors in the use of capitals and punctuation marks than the upper classes were formerly able to do.

Within these recent years much has been said and written upon the subject of reading. Formerly it was the practice to drill upon a limited number of pieces. The average number of selections taught to the first class in the grammar schools of Cambridge in a half year did not exceed ten. This was the practice not only in Cambridge, but in all other places. It is now the aim, not only to teach reading, but to introduce the child to the best literature he may be able to comprehend. We now read in the schools complete portions of Longfellow, Whittier, Hawthorne, Irving, and others, and provisions have been made by which the master of any grammar school can secure for use in his classes copies of any standard work of English literature. To my mind this provision is far-reaching in its beneficial influence upon both teachers and pupils. It is with satisfaction that I remember that years before the words, "reading at sight" and "supplementary reading" were heard in our educational meetings, the pupils of the Putnam school were reading at sight, from books bought partly with the money appropriated by the city and partly with the proceeds of a public exhibition given by the pupils.

The instruction in music has been under the supervision of one teacher from 1850 to the present time (1890). In the beginning the teaching was essentially rote teaching, but with the increasing interest in the study of music the instruction became more and more scientific in its character, and it has kept pace with the advanced methods of instruction in all other branches. Fortunate, indeed, has the city been in its teacher of music. With rare qualities of mind and heart, with unquestioned knowledge of the subject he has taught, with devotion to his chosen profession, Mr. Lincoln has gone from school to school these forty years, faithfully and successfully doing his work, respected and beloved by teachers and pupils alike.

Previous to 1866 the rod was frequently used in the schools of Cambridge, as elsewhere. I do not believe that the school committee or the teachers themselves realized how frequently it was used. In 1866, a case of discipline in one of the schools brought the question of corporal punishment prominently before the public. Let me say, however, that, in the case referred to, there was nothing of severity or unkindness that made it unlike other cases that were occurring from time to time in different parts of the city. Since 1866 corporal punishment has seldom been administered in the schools of Cambridge. Is it wise to banish it wholly from the school-room? I have no doubt that there are boys in the schools who would be benefited by a good, sound whipping, if it was given by a steady hand and prompted by a kind heart, but, with public sentiment as it is, I do not think that teachers should be expected to use the rod as a means of discipline. Pupils who do not conform to the reasonable rules of the schools should be separated from those who do. The law relating to "such pupils as persistently violate the rules and regulations of the common schools" should be enforced.

During the past year other important changes have taken place, as described elsewhere in this report. New studies have been introduced into the grammar schools, and a special teacher has been appointed to direct the work of the primary schools.

The superintendent desires to bear testimony to the valuable service already rendered by the special teacher. She has received the hearty coöperation of the teachers, and under her skilful guidance a more uniform degree of excellence in the primary schools will undoubtedly be secured.

KINDERGARTENS.

For eleven years Mrs. Quincy A. Shaw maintained in Cambridge three free kindergartens, and one other was maintained by a few Cambridge ladies. These were transferred to the care of the school committee in September, 1889, and became a part of the public school system. In September, 1890, two more of these schools were established, and now there are six kindergartens, with three hundred pupils, taught by twelve teachers. Five of these schools are in our primary school buildings, and are called by the names of the schools with which they are connected, namely: the Boardman, Dunster, Gore, Lowell, and Riverside. The other school is at 79 Moore street, and is called the Moore street kindergarten.

TRAINING SCHOOLS.

In 1869, the superintendent of schools, Mr. Edwin B. Hale, recommended the establishment of a training school. In giving his reasons for this recommendation, he said: "The fact is apparent that teaching can never assume its proper place until those who are to enter upon its high responsibilities will subject themselves to a thorough professional training, and will also, so long as they may teach, manifest some degree of professional zeal. With us it is felt that the great need is a school where young ladies graduated from our high school may be trained in the best methods of instruction and of discipline, while at the same time they may have constant practice in the actual work of the school-room, under the eye of an experienced teacher, who will be competent to see their faults and faithful enough to expose them."

In accordance with this recommendation a training school was soon opened. The original plan of this school, as given in the annual report of the school committee for 1870, contemplated the appointment of a principal and an assistant; and it was believed that the young ladies of the training class would themselves be able to conduct the instruction of the primary classes under the general direction of the assistant; while the principal was to be occupied mainly with the young ladies of the class in training.

It was found, however, after several months of trial, that the plan was defective. The primary classes could not be managed by the young ladies as was attempted. The scholars understood very quickly the difference between them and permanent teachers, and could not be made to respect their authority. And the frequent changes required to give every one her due proportion of practice in teaching seemed to doom the classes to be instructed by teachers in the most inexperienced stage. As soon as one had acquired a little experience and control of the room and gave promise of doing well, the time of another would begin, and the round of inexperience would have to be repeated.

This plan was soon changed by the appointment of a permanent teacher for each room, the members of the training class being expected to get experience by giving lessons from time to time in the presence of the regular teachers. Daily instruction in methods of teaching was given by the principal. Under this plan the school was continued for twelve years. The average number of graduates was eleven, and the annual cost of the school—that is, of the training department—was twelve hundred dollars. Nearly every one of these graduates received an appointment in the schools of Cambridge, and nearly every one of them would have received an appointment had there been no special training. This school, therefore, was the means of raising the standard of qualifications for the position of teacher in Cambridge. Two causes led to its discontinuance. The principal one was the cost; the other was the fact that these young teachers did not get sufficient experience in the management of schools to enable them at once to enter successfully upon the work of teaching.

The school, however, was one of great excellence, and its stimulating influence on the other schools of the city was not to be measured by the cost of the school.

In 1884, our present training school (called the Wellington school) was established. It differs from the other training school in these respects: (1) in the fuller preparation required for admission; (2) in the character of the work performed; (3) in the cost of the school to the city. It differs from the other grammar and primary schools mainly in this: that all the classes, or nearly all, are taught by inexperienced teachers, the members of the training class.

In planning the school the problem to be solved was this: How to secure thorough instruction in methods of teaching, and experience in the management of schools, *without adding a dollar to the school expenses.* Experience in the management of schools can be obtained in only one way, by doing the work of the teacher. While doing this a person has neither time nor strength for a regular course in professional studies. But the limitation in the cost of the school made it necessary for the members of the training class to be the teachers. It was therefore decided that a normal school course should be included in the qualifications required for admission to the class.

The cost of the school depends on the number of pupils. The limitation is, that the cost per pupil shall not exceed the average cost of pupils in the other grammar and primary schools of the city.

The school now numbers six hundred fifty pupils, and has all the grades of the primary and grammar schools except the highest grammar grade, which will be added next year. With this number in attendance, the committee in charge of the school is authorized to expend in salaries at its discretion $9,200 per annum.

The required time of service for the members of the training class is one year, and the money compensation $200. Graduates who do not at once obtain positions are continued in the school at a salary of $300. Experienced teachers who have not been members of the training class are also employed when the corps of teachers needs strengthening.

By the rules of the school board, the committee on the training school is authorized to employ four teachers, at a salary of $400 per annum, to act as substitutes in the grammar and primary schools, and, when their services are not so required, to work in the schools to which they shall be assigned by the superintendent; the amount received by each teacher as a substitute to be deducted from her salary. These teachers are usually assigned to the training school, that there may be at that school a sufficient number of teachers to make it practicable for the members of the training class to visit other schools of special excellence.

The school is under the immediate charge of a master aided by two female assistants. These teachers, or supervisors, have no special class-room, but are responsible for the work in all the grades. At the present time there are twenty-three teachers connected with the school, and their salaries are as follows: master, $2,000; two assistants, at $800 each; one teacher, at $620; one, at $500; two, at $400 each; one, at $350; three, at $300 each; twelve, at $200 each. It is now the intention to have permanent teachers for the eighth and ninth grades.

By the establishment of this school, Cambridge young women who desire to teach, and who have made special preparation for the work, have an opportunity to gain experience under conditions favorable to their own success, and without prejudice to the interests of their pupils, their inexperience being offset by the large experience of the principal and his assistants.

By the rules of the school committee, no person is eligible to the position of teacher in the schools of Cambridge who is not equally qualified with teachers who have completed the required time of service in the Cambridge training school; that is, no person is eligible who has not had advantages equivalent to a high school course, a normal school course, and a year's experience in teaching.

This rule prevents even the nomination of a teacher who has not had what may fairly be considered a good preparation for the work. There is still another rule which provides for the inspection of the work of every teacher who has been nominated, before final action on the nomination is taken. This inspection is made by at least three members of a committee called the committee on the examination of teachers.

The rules also provide that this committee "inquire and report to the board in executive session as to the success of any teacher in the employment of the city, when requested so to do by any member of the school committee, or by the superintendent."

With requirements like these enforced in every town and city, why should there not be an excellent teacher in every school? There is one sufficient reason: the supply of even good teachers is not equal to the demand.

President Walker has expressed the opinion that every college for women should become, in a high sense, a normal school.

These colleges, I believe, will be instrumental in raising the standard of qualifications for teachers in the elementary schools. The number of college graduates is greatly in excess of the demand for high school teachers, and the time will soon come when many of these graduates will be glad to accept positions in grammar schools. In Cambridge, special inducements are offered to college graduates to begin the work of teaching in the grammar grade. It is not expected, however, that they will do their work as successfully at first as those who have had special preparation for it; but it is believed that in the end there will be positive gain to the schools by the appointment of teachers who have laid a broad foundation.

The following is from the report of the committee on the training school: "The committee feel a serious sense of responsibility in regard to this school. The awakened interest of the public in matters of education, the ever-increasing desire for thorough, systematic, and efficient teaching, makes the demand for really good teachers more and more imperative, and the city looks to the training school for a large part of its supply. The only way to meet the call is to admit to the advantages of the school; only promising material, as far as it is possible to judge by recommendations and personal interviews; to retain only such persons as make their promise good; and to present as applicants for permanent positions only such as have fairly earned their right to apply. This is at times a difficult task and your committee need to feel that the school committee are always ready to sustain them in their earnest endeavors to raise the standard of the school to a high level and keep it there."

EVENING SCHOOLS.

The first evening schools in Cambridge were kept during the winter of 1851–52. There were two schools — one in the First Ward, with an average attendance for twenty-four evenings of fifty-four pupils; and the other in the Third Ward. This school was kept twenty-six evenings, and the number taught was ninety. The teaching was wholly voluntary. The school committee assumed the expense of warming the rooms, but the other expenses — for books, slates, and other materials — to the amount of $70 in one school and about $50 in the other, were defrayed by the gentlemen by whom the schools were established.

The school committee in their report say: "The essential question of the practicability and usefulness of these schools having been established by the public spirit of private individuals, it is now clearly the duty of the public authorities to take the matter in hand, and to provide for their continuance under competent and salaried teachers."

Evening schools, however, were not maintained by the city till 1868, when three schools for men and boys were organized—one in each police district. The number of teachers was ten, and the number of pupils about four hundred. These schools were reopened in 1869, and three others established for women and girls. These were continued from year to year till 1879, when, with the exception of the one in Ward Three, they were closed, as a lack of interest was shown by irregularity of attendance.

No evening schools were kept during the years 1881, '82, and '83; but in 1884 they were again opened, the legislature having passed an act requiring all cities and towns of ten thousand or more inhabitants to maintain such schools.

In 1888–89, the evening schools, now called the elementary evening schools, were for the first time provided with suitable accommodations, the day school-rooms being used for this purpose.

These schools have been continued for fifty evenings each year to the present time, and the facts relating to them have been given in the annual reports. The statistics for the schools for 1891–92 are as follows: Average attendance in the Allston school, 94; in the Putnam, 92; in the Webster, 61.

In 1886, another act was passed requiring the establishment of an evening high school in cities of fifty thousand inhabitants or more, whenever fifty residents, fourteen years old or over, shall certify their desire to attend. Under this act an evening high school was opened January 3, 1889. From the first the school has been under the charge of Mr. Charles F. Warner, the teacher of physics in the English high school, and its success is largely due to his energy and ability. That his other duties will no longer permit his continuance in the school is regretted by the committee. The average attendance for the fifty evenings of the school for 1891–92 was 83, and the number of teachers was 7. Diplomas are given to pupils whose attendance and work have been satisfactory.

EVENING DRAWING SCHOOLS.

At the session of the legislature in 1870, an act was passed requiring every city having more than ten thousand inhabitants to make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age, in either day or evening school, under the direction of the school committee. In compliance with this act an evening school was at once opened. Ninety persons were present the first session, and during the two months of its continuance one hundred and forty — among them carpenters, machinists, carvers, glass-cutters, stereotypers, and cabinet-makers — availed themselves of its privileges. The committee in the annual report expressed the belief "that the school will prove one of the most useful as well as popular features of our common school system." The school was continued in 1871 upon the same plan as in 1870, but for the years 1872 and '73 it was discontinued, as suitable accommodations were not provided. In 1874 it was again opened. It was organized in two classes, the mechanical and the free-hand. Each class had two sessions a week for twenty-five weeks.

This has been the plan upon which the school has been conducted from that time to the present. The school since 1889 has been under the supervision of the director of drawing for the day schools. Both classes are now provided with good accommodations. The mechanical class has rooms in the Central Square building, and the free-hand class occupies the drawing-room in the new English high school-house. The average attendance of the school for 1891–92 (fifty sessions) was: free-hand class, 50, with three assistant teachers; mechanical class, 77, with four assistant teachers. Diplomas are given to pupils who have satisfactorily completed the prescribed course of three years.

A detailed report of these schools for 1892 was submitted to the school board in December by the committee in charge, accompanied by an interesting account of the work of the evening high school, by Mr. Warner.

MUSIC.

The teaching of music was first introduced into the schools in 1845, the committee selecting the four principal grammar schools for the experiment. The report for that year says: "A teacher, Mr. Joseph Bird, was employed, according to a proposition of his own, at the rate of $50 a school per annum, on condition that the experiment should prove successful, and there should be a sufficient surplus from the appropriation for the year to justify the expenditure." In 1846, under the instruction of C. Plagge, it was extended to all the schools. December 19, 1849, Mr. Plagge resigned, and in the following January Joseph Schmidt succeeded him. He remained, it appears, but a few months, when a committee was appointed to nominate a candidate to fill the vacancy caused by his retirement. At the meeting of the school board in June, this committee "recommended the appointment of Nathan Lincoln, and that he enter upon his duties at the beginning of the fall term." Mr. Lincoln was elected, and for more than forty years was the teacher of music in the schools of Cambridge. He resigned December 31, 1890, and Frederick E. Chapman was elected his successor.

For many years the instruction was given in all the classes by the teacher of music; but, with the rapid increase in the number of school rooms, it was decided in 1870 that in the primary schools it should be given by the regular teachers. In 1874, the same plan was adopted for the lower classes of the grammar schools.

From 1872 to 1892, the teaching of music was discontinued in the high school, the large hall in which the pupils assembled having been divided. At the beginning of the present school year it was resumed, and lessons are now given weekly in the Latin school and the English high school by the director of music. In 1865, a piano was procured for the high school through the efforts of the graduating class. In 1873, the grammar schools were supplied with pianos, an appropriation having been made for this purpose by the city council. In 1891, a new grammar school was established. The piano for this school was one of many gifts from the Hon. Asa P. Morse, for whom the school is named. In 1892, a piano was bought for the English high school with money contributed by the pupils, teachers, and friends of the school.

In 1872, the first series of Mason's National Music Charts was introduced into the primary schools, and, in 1874, the second series into the grammar schools.

The following charts and books are now in use: of Mason's National Music Course, the New First and New Second series of charts, and the New First, Second, Third, and Fourth Readers; of the Whiting School Music Course, the Sixth Book; also Carey's Graded Exercises, The Coda, published by Ginn & Co., and a variety of supplementary music.

DRAWING.

The study of drawing was first introduced into the grammar and primary schools in 1869, and into the high school in 1871. In the high school a special teacher was employed, but in the grammar and primary schools the instruction was given by the regular teachers. In 1876, a director of drawing was appointed whose services continued for two years. In 1878, this study was discontinued in the high school, and from 1878 to 1885 there was no supervision of the work in the grammar and primary schools. Again in 1885 a director was appointed, and since that time, with the exception of the year 1888–89, the instruction has been under close supervision. During the past year the work has been resumed in the English high school, the director of drawing giving the instruction.

Mrs. Emma F. Bowler was director of drawing from 1876 to 1878; Augusta L. Balch, from 1885 to 1888; Walter F. Brackett, the present director, was elected September, 1889.

SEWING.

The teaching of sewing was introduced into the two lowest classes of the Allston school, September, 1877, and a teacher was employed on half-time. This experiment was the result of petition repeatedly urged upon the committee by ladies and others in the city, who were desirous that sewing should be taught to the girls in our schools as a regular study.

The experiment in the Allston school was continued for two years. At the end of that time the committee on sewing judged that, for purposes of experiment, sufficient time had been allowed; and, being satisfied that the results justified an incorporation of the study into the school system, brought in a resolution to that effect. The full board, however, declined to adopt the study, and it was discontinued. In September, 1889, the subject was again before the committee, and in February, 1890, sewing was introduced in all the grammar schools. Instruction was given at first in the fourth grade only. It is now given in the fourth, fifth, and sixth grades.

The following is from the report of the committee on sewing: "The committee desire to report that they believe the course in sewing to be well planned and well carried out. It has been carefully revised this year, and now comprises all that is essential to an elementary knowledge of the art. Instruction is given by competent teachers to the fourth, fifth, and sixth grades of the grammar schools, for three quarters of an hour, once a week in each grade. While the practice acquired in this amount of time cannot produce any very brilliant results, it does produce useful ones, and, in the judgment of this committee, it is not wise at the present time to demand anything more of the elementary schools, in this direction."

SCHOOL LIBRARIES AND THE PUBLIC LIBRARY.

Early in the history of the high school, efforts were made to procure a library. In 1850, the city council made an appropriation for this purpose, which enabled the city to draw from the state treasury, under the provisions of a law then in existence, a sum equal to that appropriated by the city. Contributions of books and money were also made by persons interested in the school. Mr. Smith, the head master, gave freely from his own library. Professor Agassiz delivered a course of four lectures, the proceeds of which were used for increasing the collection. From year to year the library has been enlarged until now it contains between three and four thousand volumes.

The grammar schools are supplied with books for reference, but, with the exception of the Morse and Webster, they are not supplied with books for general reading. These are obtained from the public library. The Morse school has between six and seven hundred volumes, the gift of Mr. Morse. The Webster has between three and four hundred. A part of these were contributed by friends of the school, and a part were bought with money obtained by entertainments given by the pupils and the proceeds of a lecture given by the master.

By an arrangement made by the trustees of the public library in 1890, books have been delivered at the schools once a week for the use of the three highest grades. This experiment has proved so successful that one or more of the other grades will undoubtedly be supplied in the same manner, and the number of books for each grade will be increased.

Near the close of the winter term a year ago, the following letter was sent to the pupils of the seventh, eighth, and ninth grades:

"For more than a year books from the public library have been delivered at the schools. The superintendent has learned with pleasure of the number of books delivered to each school and of the interest with which they have been read. That he may know more definitely of the working of the plan, he invites you to answer the following questions: (1) What can you say in regard to the present plan of supplying library books? (2) How many library books (including any taken directly from the library) have you read since last September? (3) Write the titles of some of the most interesting books that you have read, giving the author of each book. (4) Give an account of the book you liked best."

It gave the superintendent great pleasure to read the answers to these questions. They showed that the action of the trustees in planning for the delivery of books at the schools was appreciated; that a large number of pupils read as many books as it is profitable for children to read while attending school; that, judging by the books mentioned as "the most interesting," and by the account given of the one "liked best," the books were in the main wisely selected and carefully read.

The library and the schools are being brought into closer relations to each other. A year ago a list of books of special value to teachers was prepared by the master of the training school and printed in the school report. Comparatively few of these books were in the library; but they were bought at once, and the teachers now have within their reach more than eighty volumes relating to the history of education and the theory and practice of teaching. More recently a large number of geographical books have been added to the library. These were recommended by Professor Davis of Harvard University, who is giving lectures on the subject of geography to the teachers of the Cambridge grammar schools. This action of the trustees shows the spirit in which the affairs of the library are conducted.

TRUANT OFFICERS.

The truant officers were first elected by the school committee in 1873. Previous to this time the duties required by the truant act of 1862 were performed by members of the police. The committee elected five officers — Messrs. Child, Dudley, Griffin, Folsom, and Mason. In 1877, the number was reduced to three. This number was continued to January, 1893, when another officer was appointed. The officers are Moses M. Child, Francis M. Mason, John Collier and John Carmichael. Messrs. Child and Mason have served continuously since 1873, and Mr. Collier since 1878.

During the year the committee on truant officers has held monthly meetings, and the work of the officers has been done more systematically than heretofore. By report of the committee, fifteen boys have been sentenced by the district court to the truant school for truancy or for persistent disobedience to the rules of the school.

The public statutes require that all persons or corporations who have in their employ children between the ages of thirteen and sixteen years shall keep on file an "age and schooling certificate" signed by the superintendent of schools or by some one authorized by him. Such certificates have been given to two hundred and eighty-seven children during the year.

At the February meeting of the school board it was voted that the city council be requested to petition the county commissioners for the establishment of a truant school for Middlesex county. The legislature has authorized the expenditure of $50,000 for this purpose; and it has been decided to build two schools, one at Chelmsford and the other nearer to Cambridge.

JANITORS.

Section 31 of the city charter which went into effect January 1, 1892, provides that " The mayor shall appoint the janitors of the school-houses, subject to confirmation by the school committee; and that such janitors shall perform their duties under the direction of the school committee."

In accordance with these provisions, twenty-six janitors were appointed; all but two are still in service.

Supervision of the janitors was assigned to the committee on school houses and health. This committee has held meetings monthly during the year. The principals of the schools are required to report each month to the superintendent of schools whether or not the work is done in a satisfactory manner, and to report any occasion for complaint to the committee on schoolhouses and health.

The reports have been generally satisfactory, although a few cases have required the attention of the committee.

This system has brought about a marked change in the spirit and manner in which the duties of the janitors are performed.

TERMS, HOLIDAYS, AND SCHOOL HOURS.

Fifty years ago the following holidays and vacations were granted to the schools: Wednesday and Saturday afternoons; one week at the close of the winter term ; the day of the annual State Fast; the first Monday in June, and the week preceding said Monday ; the Fourth of July; Commencement week and the week preceding it; the annual Thanksgiving week, and Christmas day. No other vacations or holidays were allowed except by special vote of the school board. The length of each session was three hours, and during each session there was a recess of ten minutes. From time to time changes have taken place in the length of the terms, the number of holidays, and the number of hours in each session. At the present time the regulations are as follows: —

The school year is divided into three terms: —

Autumn Term.— The time for beginning the autumn term is fixed annually at the regular meeting of the committee in April. The autumn term ends December 23, with the morning session.

Winter Term.— The winter term begins January 2 (or the day after that celebrated as New Year's day), and ends on the Wednesday before the first Thursday in April.

Spring Term.— The spring term begins the second Monday after the first Thursday in April, and the time for closing the spring term is fixed annually at the regular meeting of the committee in April.

Holidays.— Saturdays; Thanksgiving day, with the preceding day and the day following; Washington's birthday; Memorial day; the Seventeenth of June; and in addition to these, for the high schools, Commencement day at Harvard College.

School Hours.— The sessions of the high schools begin at 8.30 A. M., and close at 1.30 P. M. The high schools have a recess of half an hour in each session.

The morning sessions of the grammar and primary schools begin at 9 and close at 11.45. The afternoon sessions begin at 2 and close at 4, except during the months of November, December, and January, when they begin at 1.30 and close at 3.30. The grammar and primary schools have no out-door recess.

The sessions of the kindergartens are from 9 A. M. to 12 M.

ELECTION AND SALARIES OF TEACHERS.

The teachers are chosen annually, and their salaries voted, at the regular meeting of the committee in June. All of the teachers who do not decline a reëlection are considered candidates. In the appointment of new teachers, experience may be considered in fixing the salary. Teachers are paid one-tenth of their annual salary at the beginning of each month, except the months of August and September. The pay of substitutes in the grammar and primary schools is one dollar for each school session.

SCHEDULE OF SALARIES.

Latin School and English High School.

Head-Masters	$3,000 00
Masters	2,000 00
First Assistant	1,050 00
Assistants, first year	700 00

with an annual increase of $50 until $950, the maximum, is reached.

Temporary Assistants	500 00

Grammar Schools.

Masters	$2,000 00
Sub-Masters	1,000 00
Master's Assistant	700 00
Assistants, first year	400 00
Assistants, second year	470 00

with an annual increase of $50 until $620, the maximum, is reached.

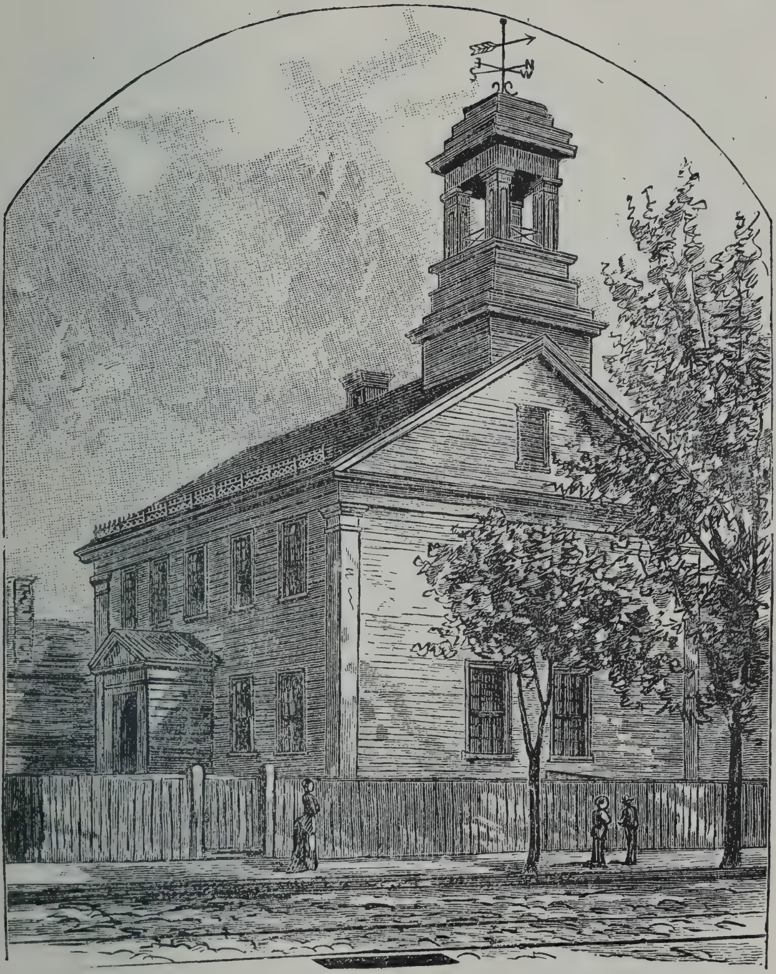
Primary Schools and Kindergartens.

The salaries of the teachers of the Primary Schools and of the Kindergartens are the same as those of the assistant teachers in the Grammar Schools. The assistants in the Kindergartens receive for the first year $400, with an annual increase of $40 until the maximum salary, $520, is reached.

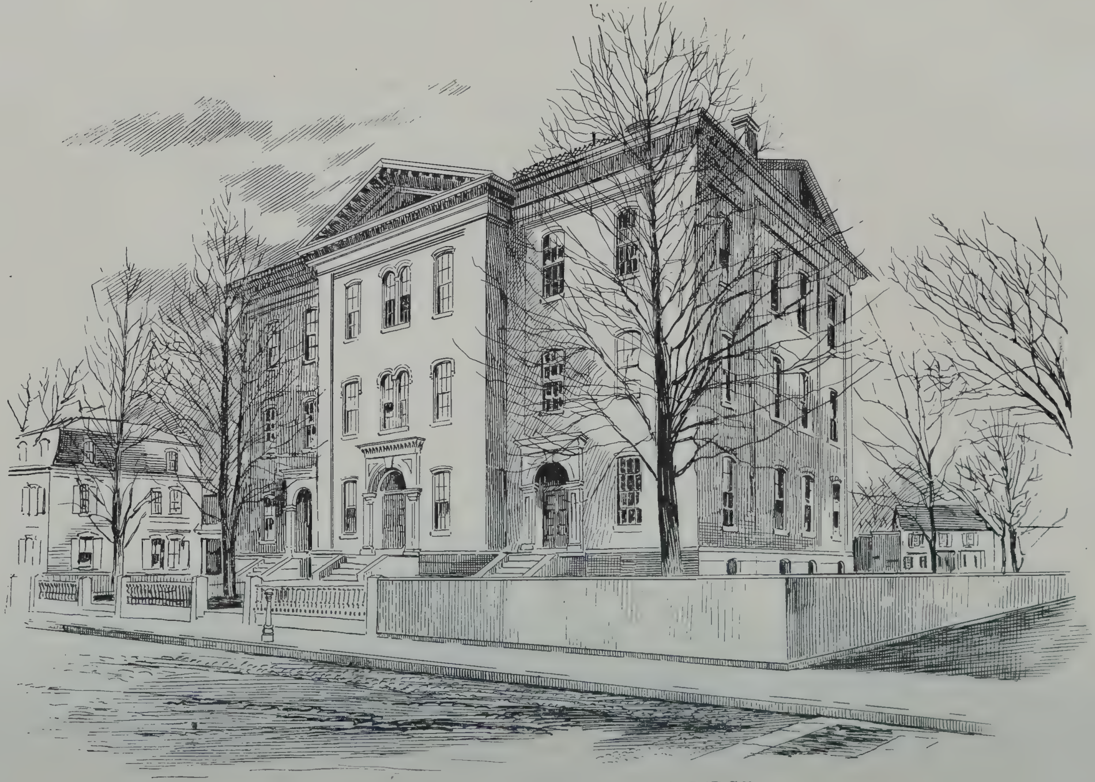
Principals of the Primary Schools receive, in addition to the regular salary, five dollars per annum for each separate class in the schools under their charge.

Special Teachers and Officers.

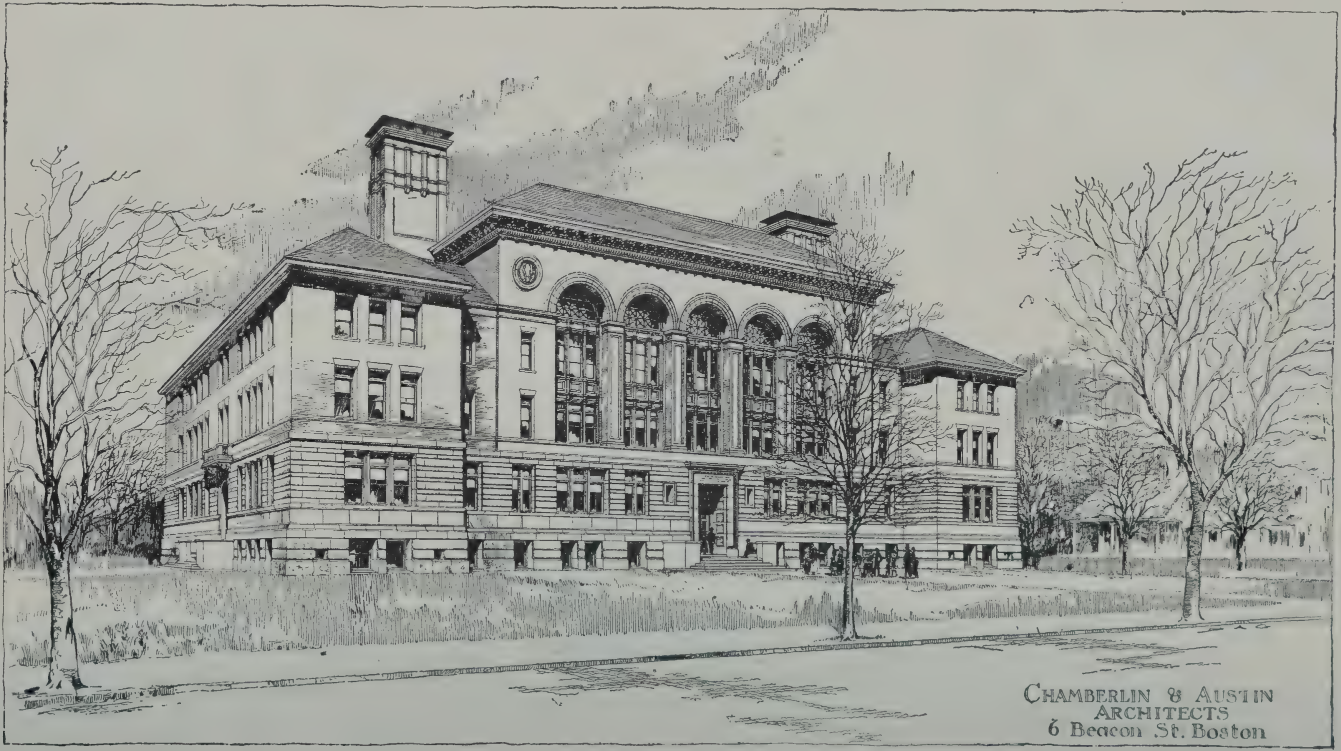
Director of Music	$1,700 00
Director of Drawing	1,700 00
Teachers of Sewing	600 00
Superintendent of Schools	3,000 00
Special Teacher in Primary Schools	1,000 00
Agent of the Committee on Supplies	1,700 00
Three Truant Officers, $900 each	2,700 00
Secretary of the School Committee	300 00
Page of the School Committee	25 00
Secretary and Librarian of the English High School	500 00
Secretary and Librarian of the Latin School (two-fifths time)	200 00



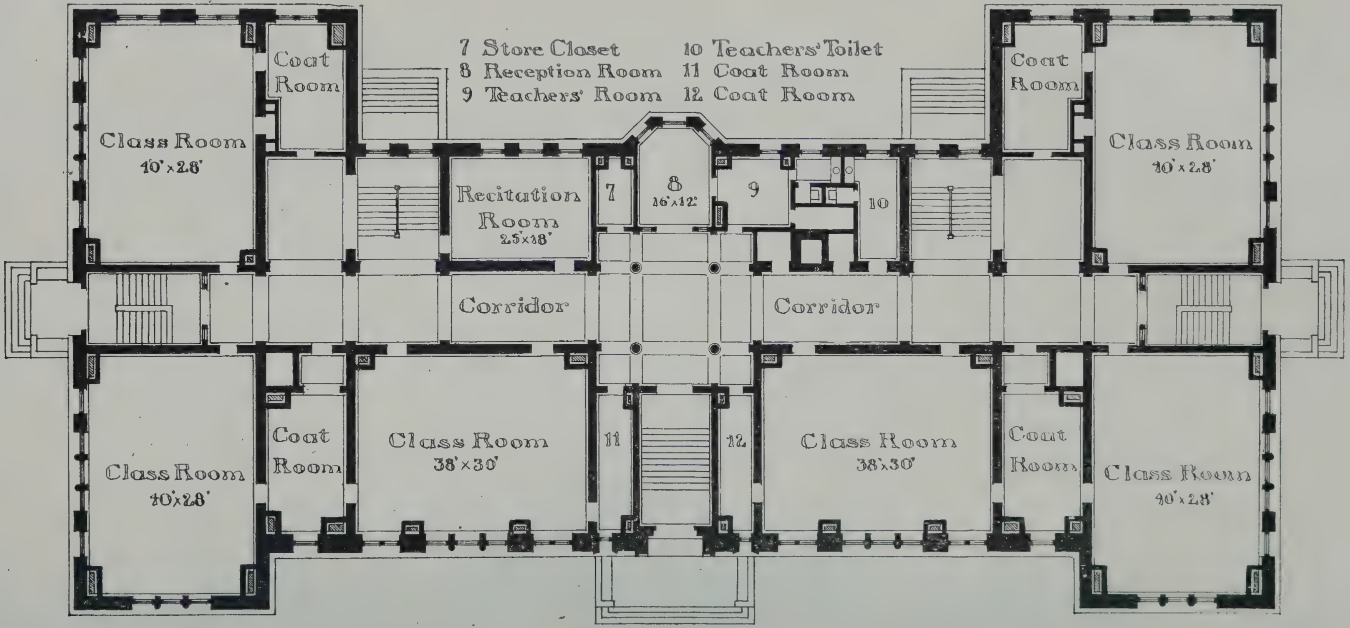
FIRST HIGH SCHOOL BUILDING, CAMBRIDGE.



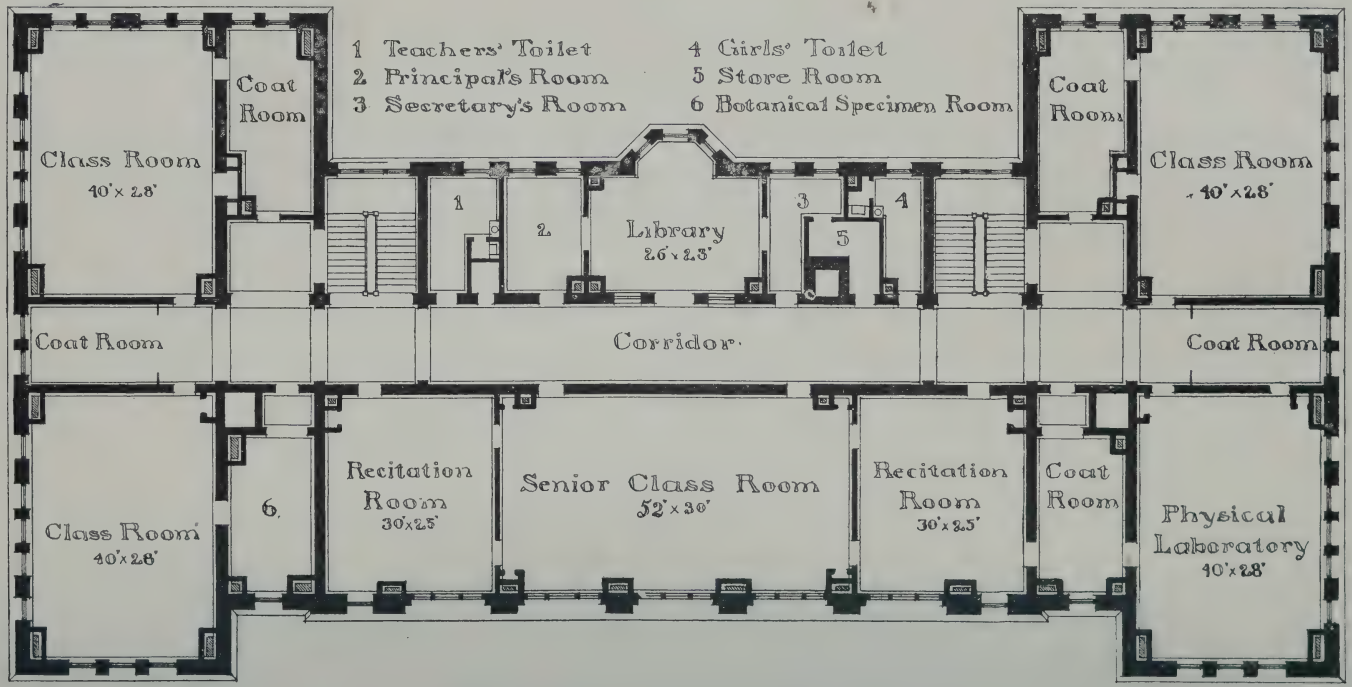
LATIN SCHOOL BUILDING, CAMBRIDGE.



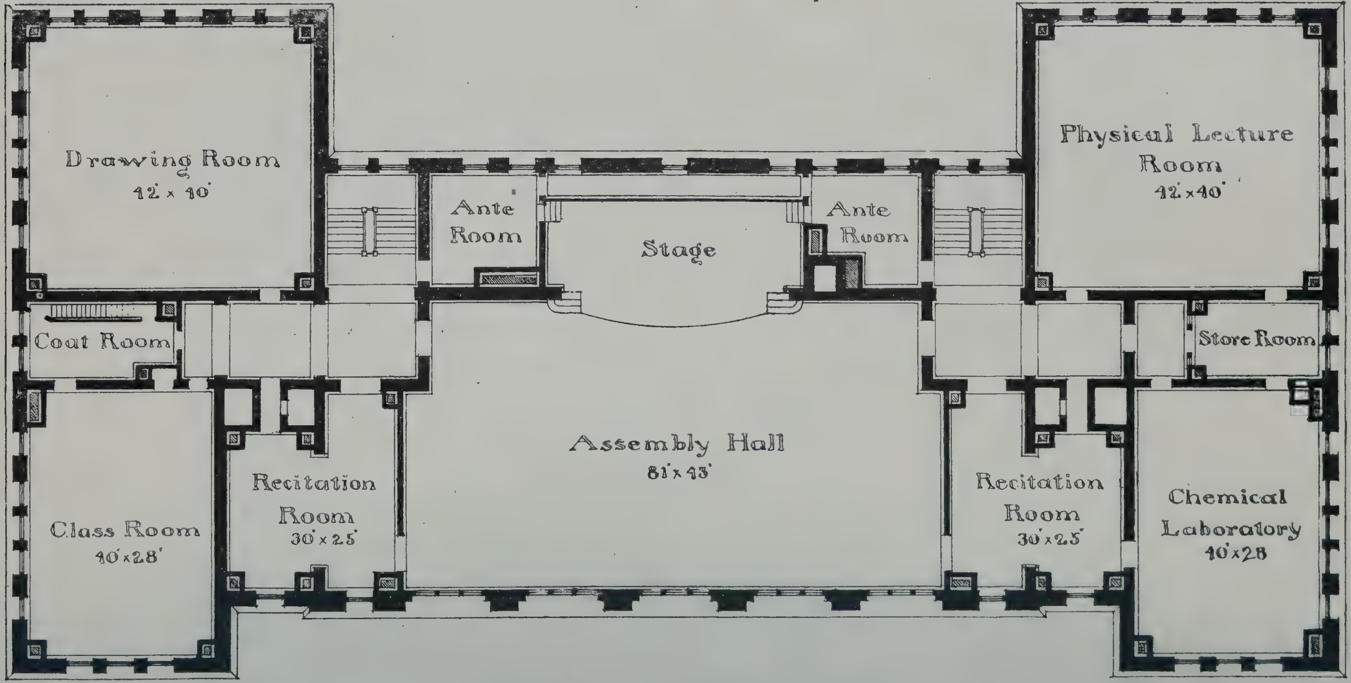
ENGLISH HIGH SCHOOL BUILDING, CAMBRIDGE.
Description on page 122.



FIRST FLOOR PLAN



SECOND FLOOR PLAN



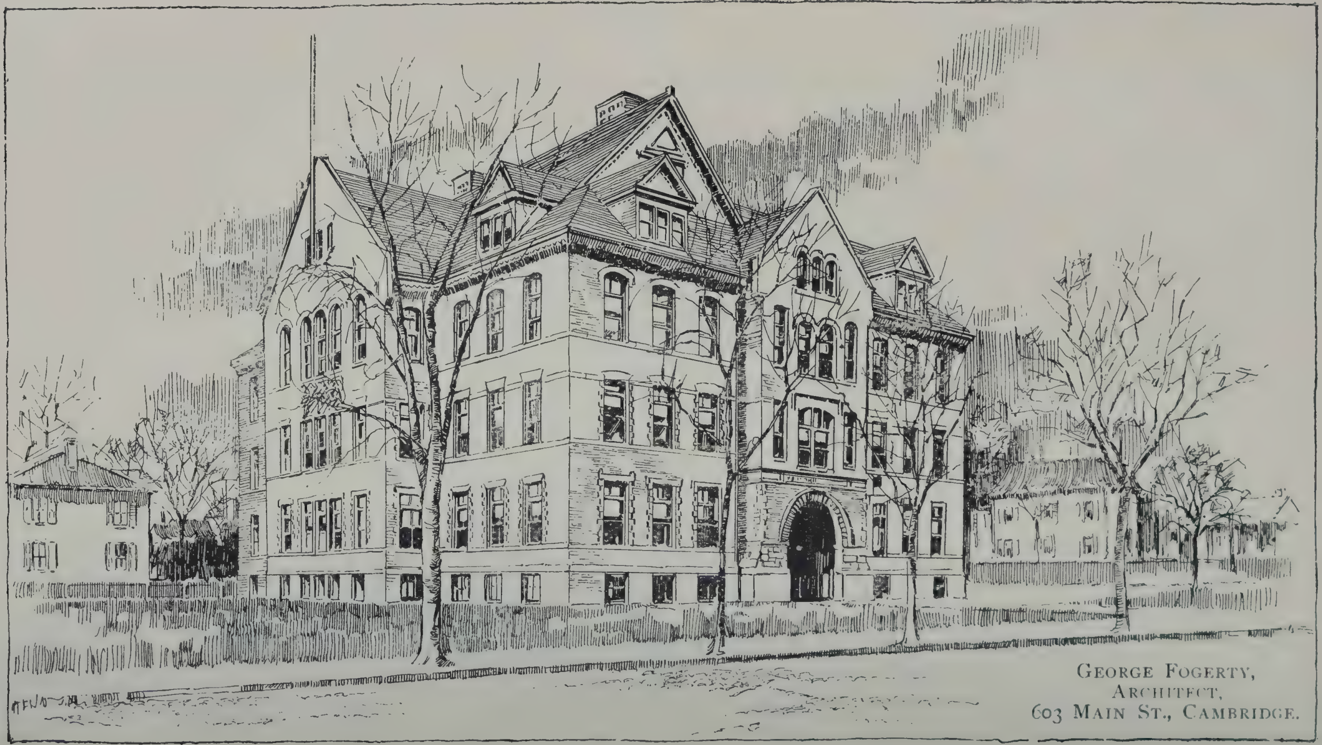
THIRD FLOOR PLAN

LIBRARY ROOM.

CHEMICAL LABORATORY.

DRAWING ROOM.

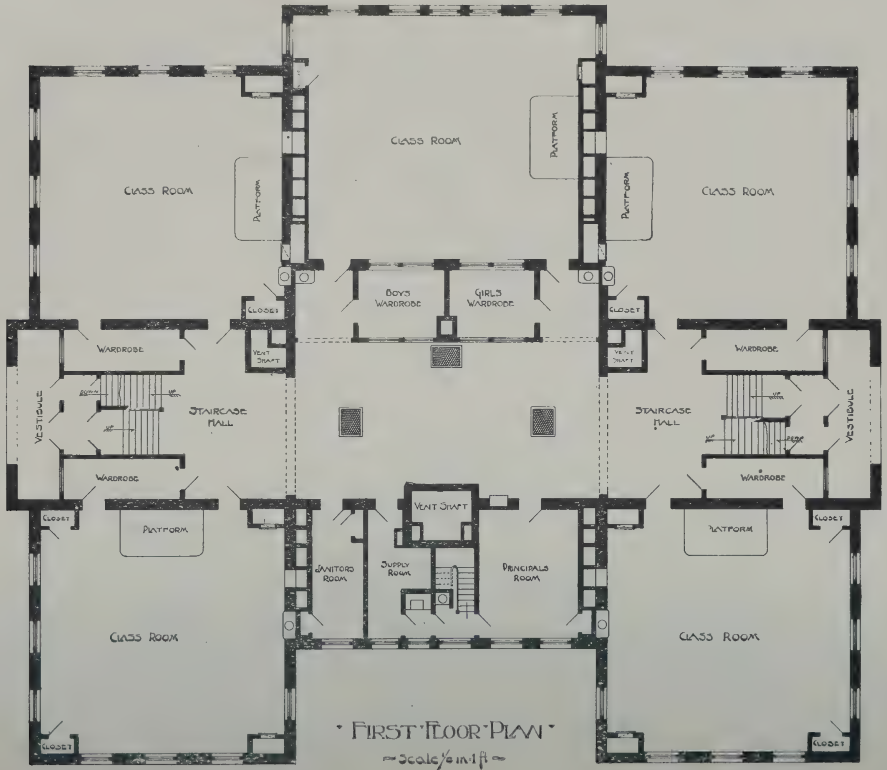
MANUAL TRAINING SCHOOL.　　CAMBRIDGE PUBLIC LIBRARY.



George Fogerty,
Architect,
603 Main St., Cambridge.

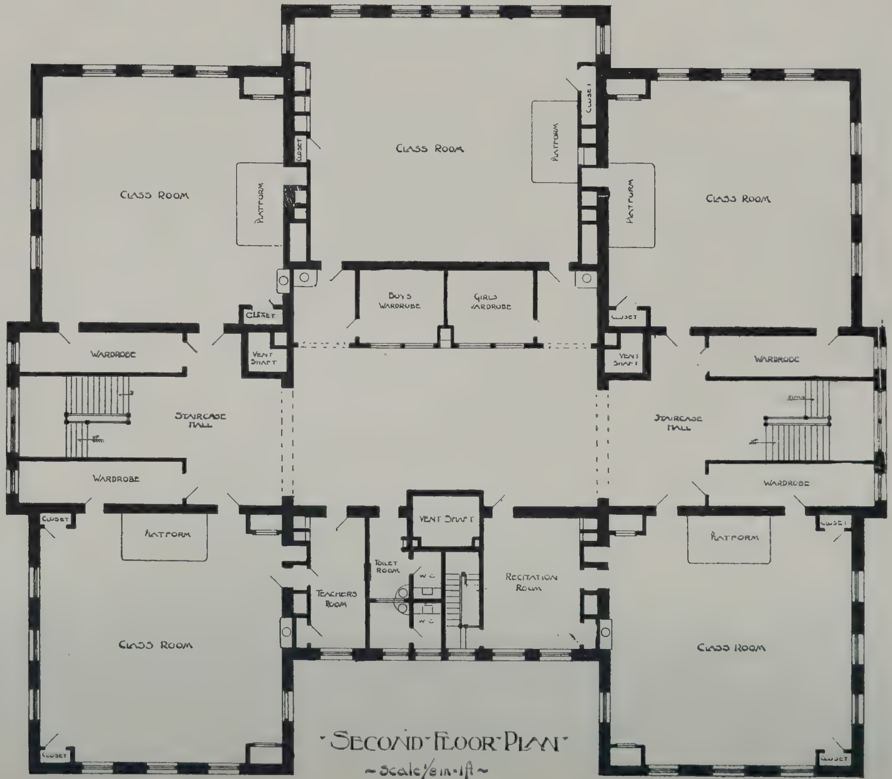
MORSE GRAMMAR SCHOOL HOUSE, CAMBRIDGE.

Description on page 191.



· FIRST · FLOOR · PLAN ·

~ Scale 1/8 in. 1 ft ~



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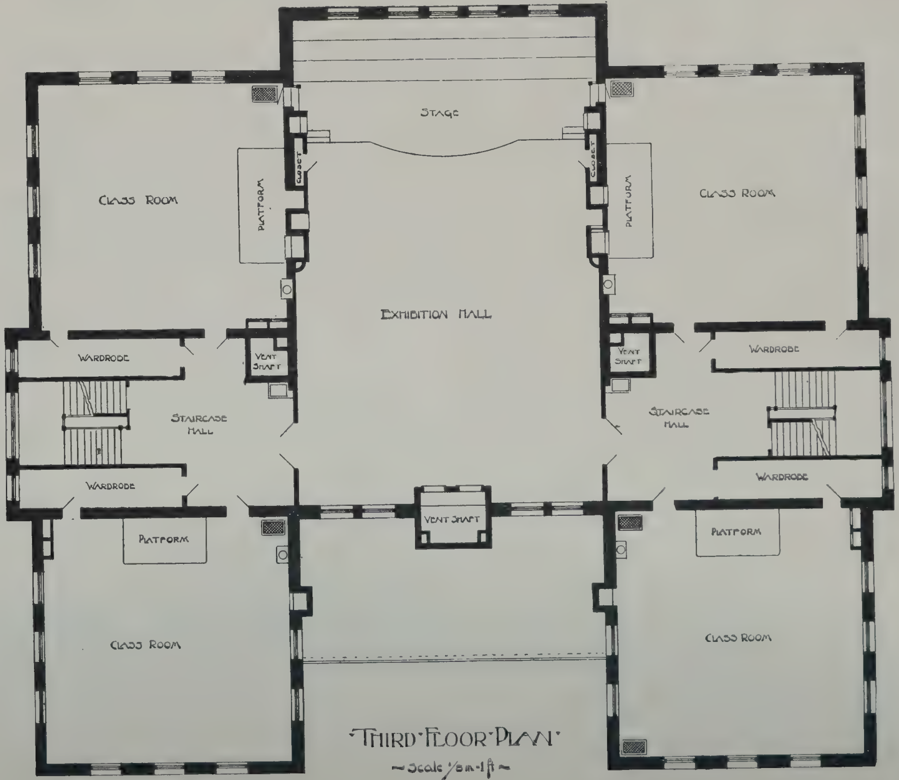

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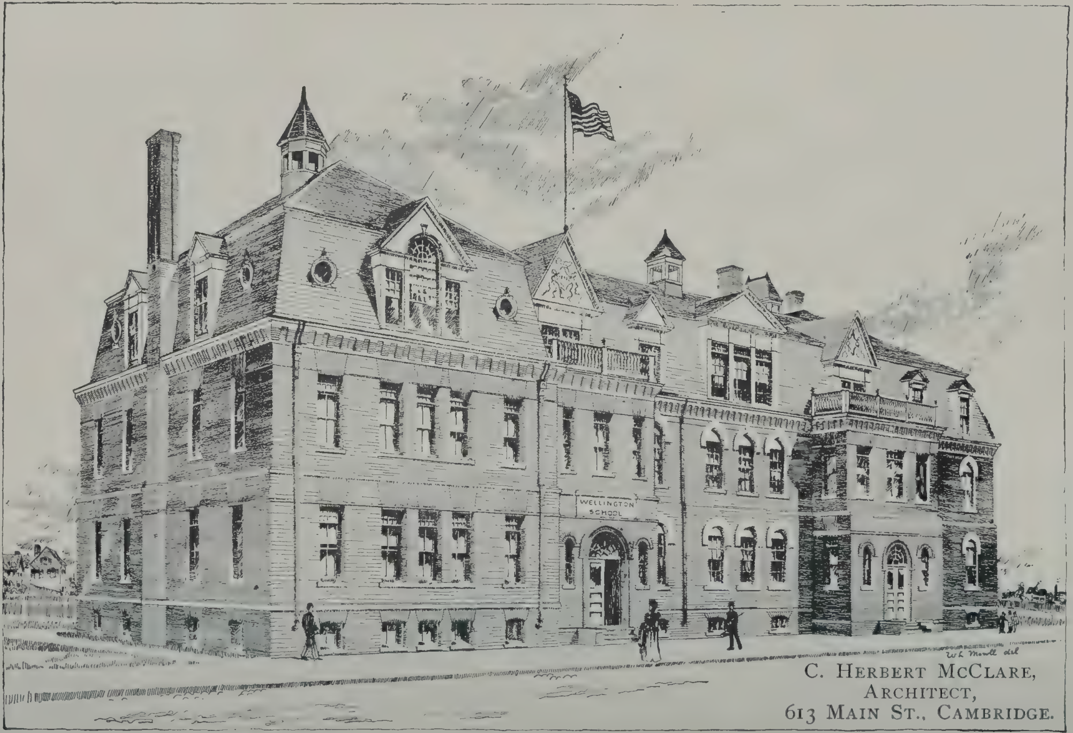

C. HERBERT McCLARE,
ARCHITECT,
613 MAIN ST., CAMBRIDGE.

WELLINGTON TRAINING SCHOOL HOUSE, CAMBRIDGE.

Description on page 192.

EARLY HISTORY OF THE HIGH SCHOOL.

BY ELBRIDGE SMITH, HEAD MASTER OF THE SCHOOL FROM 1847 TO 1856.

[Prepared for the Dedication of the English High School Building, April 4, 1892.]

It is seldom the case in the history of any community that the landmarks of its educational progress for half a century can be so distinctly seen as in Cambridge to day.

In riding up Broadway from the bridge to the colleges we pass four buildings which were built by the town or city of Cambridge for the accommodation of its high school. These buildings, very slightly modified from their original structure, are fair exponents of the education of their times. The first two houses were never intended exclusively for high school purposes, and in the first the second story alone was ever given to the high school.

The house on Amory street was built upon the same plan, the second story alone allotted to the high school, while a middle and a primary school were to be accommodated in the first.

For two months after entering the new house in June, 1848, the high school was confined to the second story, but in September one of the lower rooms was taken, while the other remained for some years as a primary school room. For sixteen years the high school found its home in Amory street. In 1864, while Sheridan was dealing some of the finishing blows to the Rebellion in the valley of the Shenandoah, the high school followed the course of empire another stage westward and found greatly enlarged accommodations in Fayette street. There it remained until February, 1892, having sent off in the meantime a classical colony of some two hundred pupils to Lee street.

We are met this evening in this princely mansion to dedicate it in customary form to the service of the Cambridge high school. The site has been determined by the generosity of a native of Cambridge, whose name will be held in grateful remembrance while the language we speak retains its meaning in the ears of men. The school finds itself here within eye-shot and ear-shot of its earliest homes on Holyoke and Garden streets, and almost within the shadow of the church of which it is the defensive and offensive ally. The movements of your high school building are coincident with important events in your municipal history.

The removal to Winsor street marks the familiar fact that the "Pint" and "Port" (forgive the monosyllables which were so familiar to my boyhood, and which have not yet entirely faded from our colloquial vocabulary) had so increased in population and influence as to justify and even demand recognition. This change called the Hopkins School into existence and removed the fund from the public school, where it had been placed by a decree in the English court of Chancery in 1712. For five years the school on Winsor street was the sole high school for the three portions of the town known as Old Cambridge, East Cambridge, and Cambridgeport. In 1843 high school instruction was established in each of these three sections, and was so continued until the autumn of 1847. The town had now become a city, and one of the earliest acts of the new government was to build a high school house on Amory street for the accommodation of the whole city. These changes were marked by spirited discussions among the three sections into which nature and settlement have divided the town and city. The selection of sites for meeting-houses and school-houses has had a large share in the development of New England civilization. The eloquence of our town meetings has been far greater in quantity than that of our legislatures and congresses, and sometimes not inferior in quality. Could a liberal and wise selection be made from the debates, "bills," and "state papers" of our town parliaments, it would afford the richest field not only for the humorist but for the political economist and statesman as well. It cost a town not twenty miles from Cambridge twenty-six town meetings to locate and build its six school-houses, and it cost the same town thirty-four town meetings to fix the site of its meeting-house; but the questions were finally settled by a unanimous vote, and no happier, no prouder, congregation ever assembled than was gathered at the dedication of that meeting-house. Cambridge has contributed her full share to this phase of our New England life. She has done more: she has shown in the genius of one of her sons that the highest literature may be developed from our homely town-meeting eloquence. When the University of Oxford conferred her highest honor on one of your most gifted sons, the ground of that distinction was declared to be, not "The Vision of Sir Launfal" nor "A Fable for Critics," but the "Biglow Papers."

When the questions pertaining to the new high school were under discussion, the members of the city council from the first ward coolly remarked to their associates from the second and third wards: "Place your high school where you please; we shall make no use of it." The school committee asked for accommodations for only sixty pupils. The council considered this insufficient, but the school committee insisted that their standard was very high and that sixty were all that would be required. The council made provision for one hundred and eight pupils, and the committee at their first examination admitted one hundred and seven, and in two months asked for desks for some fifty more. The first ward was fully represented, and it was pleasant to hear the remark from a leading citizen that the high school had paid for itself, if in nothing else in establishing harmony among the three sections of the city.

The schools of Greek philosophy had their exoteric and their esoteric, their external and their internal history. Our modern schools have the same, though it is only the exoteric that has been thought worthy of record, and this in but very ordinary fashion. Let us dwell for a moment upon the esoteric features of education in New England in 1847, when the Cambridge high school was organized. The subjects taught at that time were very much the same as are taught now. The method was very different; it was what might be called the Socratic method, but this would be great injustice to Socrates. The Socratic method as employed by Socrates was excellent, but in the hands of inferior men it degenerates into mere mummery. It was the method of question and answer. The text-books of the time were written strictly and invariably upon this principle, —the questions at the bottom of the page or in the back part of the volume. But a brighter day had dawned. Systems, creeds and methods have their birth, growth, and decay. The Ptolemaic system ruled the heavens for fourteen hundred years, and it took more than a hundred years to die. Copernicus gave to the world the first copy of his immortal work on the 24th day of May, 1543 — the very day of his death. Lord Bacon died in 1626, eighty-three years after, a firm believer in Ptolemy. Milton published his "Paradise Lost" in 1671, forty-five years later, hesitating between Ptolemy and Copernicus, little dreaming that there was a young professor in his alma mater maturing a system sublimer far than he had learned from his own Raphael. The Catechism is older than Ptolemy, but it still lives in the sphere of its nativity, and no one will dare predict the day of its doom. But its death-knell was sounded in our schools when the bookbinder sent to its publisher the first edition of Colburn's "First Lessons in Arithmetic." From that moment reason and not rule became the guide, the catechumen became the disciple, the catechist became a teacher. The method of Colburn in arithmetic was soon found to be infectious; it tainted the whole curriculum of the schools, and no system of quarantine could stay the progress of the infection. Those who had been trained under the old system were puzzled, and sometimes even offended. The new dictum was quite beyond their comprehension. "Common noun, third person singular, objective case, and governed by *of*" was safe and sound; but subject and predicate, simple, complex, and compound, coördinate and subordinate, were of doubtful orthodoxy, and might lead to downright heresy. Perhaps I cannot better describe the situation than by relating an anecdote.

At the close of one of our examinations in Amory street a member of the committee addressed the school on the study of language. He had noticed that the classes had used some terms of the new dictum, that they analyzed perhaps more than they parsed, and he resolved to give an emphatic warning, intended more for the master than for the pupils. After a glowing eulogy of grammar, he rose to the highest pitch of his eloquence, and said: "What Demosthenes has said of eloquence may, with equal truth, be said of the study of language. Demosthenes said of eloquence, the first thing is action, and the second thing is action, and the third thing is action. And so in the study of language the first thing is *parsing*, and the second thing is *parsing*, and the third thing is *parsing*." And this was esteemed no extravagance, but rather a forcible statement of an important truth. This parsing, so strongly commended, had little to do with the real structure of language as the expression of thought. It was, and still remains quite too extensively, one of the lower stages in the study of language. Its discordant concords, its ungovernable governments, its misguiding and untruthful rules did keep the mind in contact with some of the impressive passages in our literature. The parsing was forgotten, but the passages parsed clung to the human mind as seed to its native soil, and as seed sown in good ground it brought forth fruit, some thirty, some sixty, and some an hundred fold.

In my boyhood, perhaps I should say childhood rather, I parsed Milton's "Lycidas." The method was dull, dreary, and "partial," but the harmony "took with ravishment the [youthful] audience," and that great monody remains with me today an "eternal possession" of truth and beauty. I parsed the "Essay on Man," and was rocked in the cradle of Pope's verse till it became a part of my spiritual existence.

The evils of the parsing system were greatly alleviated in Cambridge by superior teaching in the grammar schools, and the skilful use of Pierpont's "American First Class Book," perhaps the best compilation of prose and poetry that appeared in the first half of this century. There are many before me, I doubt not, who remember the fine renderings of the selections from that cherished manual; and I remember myself, not without emotion, the stillness that pervaded the crowded high school room while Miss Mary Elizabeth Buck read to hoary heads and delighted hearts the "Address to the Deity," — one of the last selections in that volume. No volume of its size, perhaps I might say of any size, has done more to inspire in New England youth a high moral tone and a pure literary taste than John Pierpont's "American First Class Book."

In science the instruction was wholly by catechism. There were illustrative diagrams in the text which might, or might not, be explained, and which might, or might not, be transferred to the blackboard. In the high school I found not a single article of apparatus, or a book of reference except the Bible, and possibly a dictionary. While giving directions for the construction of some book-cases in the new school-house I well remember the amazement with which the workman listened to my instructions, and his question, "What are are you going to do with them?" It was with difficulty that he could be made to understand that any books were necessary other than those belonging to the pupils. The city council voted for apparatus at my request, without question or hesitation, the sum of $700. It would be an unpardonable oversight not to mention the names of Isaac Fay and Samuel P. Heywood, the committee who superintended the erection of the new school-house. Better judgment, greater fidelity, and stricter integrity were never shown in the discharge of similar trusts.

The dedication of the new building was an occasion of great interest. It was more than an occasion, it might be termed an era in the history of Cambridge education. It was the first instance in which the people had been called together under the charter. The old animosities, if any still lingered, were forgotten. All sections, all classes, all sects, all interests were represented. The Rev. Nicholas Hoppin, rector of Christ Church, officiated as chaplain. The Rev. William A. Stearns, chairman of the high school committee, afterwards president of Amherst College, gave an interesting historical address. The Hon. James D. Green, the first mayor of the city, also added to the interest of the occasion by a timely and impressive address. In that assembly of neighbors, friends, and citizens was the President of Harvard University, the Hon. Edward Everett. To him all eyes turned in eager expectation, to be disappointed then as always by a pleasure greater than they had hoped for. His speech was strictly extemporaneous,* and was marked by the same marvellous adaptation to time and place that characterizes all his orations and speeches. On three subsequent occasions he addressed the school on its public days, and was always ready not only to speak but to act in its behalf. These speeches are all found in the second and third volumes of his "Orations and Speeches."

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*It is not without reason that I speak of Mr. Everett's speech as extemporaneous. It will doubtless seem to some an impertinence. But I have heard so many men who claimed to know all about Mr. Everett assert that everything that he wrote or spoke smelt of the "midnight oil," that I take the liberty to assert that their oil factories in this instance must certainly be at fault. It was physically impossible that he could have written this address before the dedication. It is based mainly on incidents that occurred after he entered the school-house, and he had never been in that house before. The speech is printed exactly as he delivered it, with the exception of a single word, and that word was purposely changed. In the delivery he used the word "ante-room." It was not

The educational interests of Cambridge were entrusted by the charter to a committee of seven men, two from each of the first and third wards, and three from the second. In choosing this small committee for so large and important an interest, the people acted with a wisdom too seldom seen, both as to number and manner of choice. Their public schools were regarded as a sacred concern, with which neither sect nor party could meddle. It was their Delphi, of which the committee was the Amphictyony. The harmony and friendship between the adherents of conflicting creeds and parties at that council board are among the pleasantest and most instructive memories of a period of more than forty years. This character and conduct of the committee were in themselves instructive forces acting upon pupils, teachers, and parents.

The inspection of the schools by the committee was kindly and thorough. They came to the schools not as strangers, but as friends; not as dictators, but as co-workers; not to search out defects merely, but to encourage and commend as well.

The examinations were oral, and were conducted almost exclusively by the committee. The several classes were assigned to different members, and the allotted time was strictly observed. These examinations were held in the principal school-room in the presence of the whole board, and usually a large audience of attentive parents and friends.

We have seen that when the high school started from Winsor street on its return to its birthplace, it was met less than half way by a kindly greeting from the President of Harvard College. This was but a precursor of a similar movement on

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strictly correct; the apartment to which he referred could only be entered from the main room; he therefore changed the word to "alcove." I could mention other like instances still more decisive. On one occasion in a distant city he was purposely introduced to a large audience without the slightest suspicion that there was an audience in the building, and instantly greeted by an address of welcome. He replied with the same ease and fluency, with which he always spoke, and some days after, by request, he wrote out the eech with the same accuracy as in the previous instance.

the part of the faculty and of the whole college community. A year or two after we were settled in Amory street, the city was much pleased by the announcement that Professor Felton, the Eliot Professor of Greek, had consented to serve on the school committee. He was chosen *by acclamation*, that is, by all the votes in the city. His great and varied learning was associated with a soundness of judgment and a geniality of temper which gave it double sway. He came to the schools not to display his scholarship, but by his good humor and kindly advice to awaken enthusiasm among teachers and pupils. The office was to him no sinecure. Among his early recommendations was the substitution, in the high school course of study, of English classic authors instead of extracts and compilations from their writings. This change, approved by the committee, was cordially welcomed by the teachers. The "American First Class Book" of which I have spoken had proved an excellent preparative for this advance step in the study of our "vigorous English." In the language of evolution, we must look upon this change somewhat as the naturalist regards a new species. It is not, however, a missing but an added link to the great chain of influences with which our stern old Saxon seems destined to incorporate and assimilate the tongues of our continental Babel — a step by which our great inheritance from Wiclif and Chaucer, from Spencer and Bacon and Milton, Burke and Webster and Everett, from Bryant and Longfellow, from Lowell, Whittier, and Holmes, is to be brought to the school-room and the fireside. This step is the more worthy of our notice because it is, and to the honor of Cambridge be it spoken, I believe the first instance in which this course of English classical study, now so prevalent, popular, and powerful, was formulated and practised in an American school. It was embraced by the teachers at the high school with great ardor. All the resources of our philology, archæology, and mythology, biography, geography, and topography, were put in requisition; the college faculty were summoned and the college library ransacked. Mr. Everett solved the problem of "Luke's iron crown," in a graceful article which was published in "To-day," a short-lived periodical of the time. The "two kings of Brentford" sat upon their common throne for a long time in impenetrable darkness, but finally revealed themselves in Buckingham's "Rehearsal." We sent to England and to Scotland for maps and editions.

We encountered one difficulty which we might have foreseen. It was very easy to arrange on paper a programme with Burke, Webster, and Everett as classics; but when we came to supply the classes with texts, hic labor, hoc opus *erat*. Where there is now profusion, amounting sometimes to confusion, there was then scarcity approaching to famine. It was some years before the Clarendon Press had begun to send forth those "mellifluous streams which now water all the schools.'' But let us not forget that the seed sown here in weakness has been raised in power; and that from the school where the work began there have gone forth in later years, from one of its masters, editions of Shakspeare, of Milton, of Gray, of Scott, and the rest, in the most "friendly" and instructive forms, to teach the schools of the Western world.

The method adopted under the new system was largely that of memorizing and thoughtfully reciting the text of the author studied. The Odes of Gray and the "Elegy," of course, were committed to memory, as were also the "Traveller," the "Deserted Village," and generous portions of "Paradise Lost." It was supposed that in this way the pupil would become familiar with the best words in their best combinations, and come to know what a classic means, not by arbitrary definition but by actual acquaintance: that the written language, like the spoken, would affect the daily diction and transform the mind,

> "And in clear dream and solemn vision
> Tell it of things that no gross ear can hear;
> Till oft converse with heavenly habitants
> Begin to cast a beam on the outward shape,
> The unpolluted temple of the mind,
> And turn it by degrees to the soul's essence,
> Till all be made immortal.''

The technics of grammar and formal parsing thus fell, more by necessity, perhaps, than by malice aforethought, into a secondary place; and the scholars came to find that classics were not made by rules, but that rules were derived from classics—they rose to a higher truth than the old notion—

> "That nothing goes for sense or light
> That will not with old rules jump right;
> As if rules were not in the schools
> Derived from truth, not truth from rules."

It was just at this time that a new text-book in English grammar was published, written by Robert Gordon Latham. It was an English book republished in this country with the sanction and editorial supervision of Professor Francis J. Child, of Harvard College. The authority of the editor was too great to be questioned, and teachers felt that if they did not, they ought to, like it. They accepted it more as medicine than as nutriment. In one high school not far from Boston it nearly caused a rebellion. It was not unlike what occurred at Cambridge thirty years before, when Edward Everett marked a new era in the study of the Greek language in this country by translating from the German the "School Grammar" of that eminent philologist, Philip Buttmann. That great book—great for the time—would have been of unspeakable value to American fitting schools had they been ready for it. As it was, it met with very limited patronage, and was soon forgotten. Latham, in like manner, was adopted in many high schools and academies, for it was considered hardly respectable to do otherwise; but soon disappeared from their curricula, not for want of merit but rather as seed sown among thorns or upon stony ground. We live in better days; we have learned that our great inheritance of speech is not a thing by itself, without contingent, antecedent, or consequent, but that the English language, like the English nation, has a history, a geography, a topography, an ethnography. To quote again from a gifted Cambridge poet:—

> "It has the sharp, clean edge and the downright blow of the Saxon,
> It has the majestical march and the stately pomp of the Latin,
> It has the euphonious swell, the rythmical roll of the Greek,
> It has the elegant suavity caught from sonorous Italian,
> It has the chivalric obeisance, the courteous grace of the Norman,
> It has the Teutonic Germanic inborn guttural strength."

These elements do not reveal themselves to parsing, nor even to analysis. We began the search for them when Latham's grammar was introduced into our schools. It is not yet completed. Deep-rooted habits of thought and speech, inherited from Alfred and Wiclif, from Chaucer and Spencer, are not changed by votes of school committees, nor by new requirements in the college catalogues. Schools, communities, and states have not been so trained in any manual of language as to change at the word of command from one form or method to another. A very interesting and instructive history of the progress of teaching language, from the publication of Andrews & Stoddard's "Latin Grammar"* to the present time, might be written, and such a history rightly used might very properly replace some subjects that are taught in our normal schools.

But I must not omit to notice Professor Felton's direct personal influence upon the school. He was not content with the formal and dignified examination of the pupils. He made himself familiar with them, and, in so doing, did not forfeit, but heightened, the respect which they felt for him. At the close of the examination at the end of a fall term, he found occasion to commend warmly the class in Virgil, which was composed mostly of girls. In praising their metrical and syntactical skill, he took occasion to express some serious doubts whether young ladies so well versed in hexameters, dactyls, and spondees were equally skilled in domestic science—whether they could cook a thanksgiving dinner as well as they figuratively cooked the "Cererem corruptam undis" and wielded the "Cerealia arma." This kindly banter was productive of serious consequences. A conspiracy was at once formed, and deep plans were laid. Christmas was but a month away, and they resolved to try their hands upon a Christmas dinner, as Thanksgiving was already past. The conspirators were assigned their respective parts, and my cordial approbation obtained. When Christmas came the goods were delivered, with a very courteous note from the Virgil class asking his acceptance of the viands, and a postscript informing him that they were the unaided products of the culinary lore of the Virgil class in the high school. At the close of the holidays the genial professor lost no time in going to the high school on a pilgrimage of penance. The girls received him with countenances radiant of innocent mischief, which asked in language more eloquent than speech, "What do you think of our domestic science now?" The professor retracted with emphasis all his impious doubts, and promised never to question the ability of the class to do anything that they might undertake. The class appeared perfectly satisfied with the penitent's sincerity, and were as happy, to all appearances, as if in college fashion they had smashed his windows or performed some other act of academic barbarism. But Professor Felton was not the only representative of the college community at the high school. There came with him hand in hand the renowned naturalist, Professor Louis Agassiz, his intimate friend. He had recently established his home in Cambridge, and at once became a centre of intense interest. He was anxious to become acquainted with our public school system and the schools organized under it. He sought an introduction to our State Teachers' Association and became a member of it. He offered to lecture gratuitously every week in the high school upon natural history. The offer was gratefully accepted. These lectures drew quite an audience from the city, and awakened great interest in the school. His remarkable ability at the blackboard, his intense earnestness, his whole soul beaming from the eye and glowing in every feature, were quite a new revelation to an American audience. The mosquito came in for a good share of his attention. Its structure and physiology were carefully explained; its habits of life and mode of existence, its charming melody, were already understood. Just at that time the fossil skeleton of a whale had been discovered in Vermont and sent to Cambridge for examination and restoration. These bones were brought to the school-house and the whole process of reconstruction explained to the school.

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*Andrews & Stoddard's "Latin Grammar" was first published in 1835. In this book the outlines of grammatical analysis are briefly stated. Mr. Benjamin F. Tweed, at that time master of the Bunker Hill school in Charlestown, afterwards professor in Tufts College and Washington University, St. Louis, and quite recently a member of the Cambridge School Committee, was the first to introduce this method into our public schools. He taught in the first place from a manuscript of his own preparation, based upon Andrews & Stoddard, and then, in connection with Mr. David B. Tower, published several editions of a grammar in which this method was incorporated.

At the close of these lectures a surprise, similar to that already noticed as visited upon Professor Felton, awaited the great naturalist. One of the boys, who still lives in Cambridge in a useful and respected manhood (Mr. John Ford), conceived the plan of expressing the gratitude which all felt for the instruction which had been given, by the presentation of some suitable token. The community heartily approved the plan and participated in its execution. On the appointed day the attendance at the lecture was much larger than usual. The professor had been kept in profound ignorance of the plot, and at the critical moment there was some little inattention and unavoidable disorder. This annoyed the professor, and he was evidently on the point of administering a rebuke, when the sub-master, Mr. Thomas Chase, suddenly approached him, and in the most approved manner handed him a massive silver pitcher with brief remarks expressive of the feelings of the school and of the community. The changed manner of the professor was intensely interesting. His manly countenance, from a phase of severity, assumed a most benign aspect, and his whole form was in full sympathy with the highest emotions of the human soul. The whole scene, following upon a long series of interesting antecedents, was an educational exercise not laid down in the programme, but far above and beyond it.

Professor Agassiz also gave a course of four lectures at the City Hall, the proceeds of which were appropriated to the increase of the high school library.

I have said that the teaching of science in 1847 was catechetical, or recitative; with the aid of our apparatus it at once passed into the illustrative stage. Instead of the diagram upon the printed page, the principles of physics and chemistry were illustrated by the air-pump, the electric machine, the battery, and their accessories. These illustrations had been regarded in our schools as a kind of magic, to be seen quite as much as amusing tricks or sleight of hand performances, as having any real scientific meaning. The electric machine especially was regarded rather as something devilish than as revealing to the sense one of the benignant influences on which our lives and happiness depend. Efforts were made to dispel this superstition, and to bring scholars into a kindly and friendly relation with the great agencies and influences of nature. President Sparks visited the school one day, and saw the boys manipulate with the oxy-hydrogen blowpipe.

In these exercises may be seen the germs of what may now be regarded as the truly experimental stage of scientific study, in which the force is not merely seen in its effects but measured

—in which masses are weighed as well as handled, in which laws are discovered and carefully stated, and not merely committed to memory. Pupils were permitted and even encouraged to take the apparatus in hand, and learn by manipulation as well as observation.

In teaching history an important advance was made in showing its close relation to the physical geography of the countries studied. It was then that Professor Felton was aiding in the publication of Guyot's "Earth and Man," the author's knowledge of English being inadequate to his necessities. Maps illustrating the physical features of countries were specially prepared for the school. We imported Holle's series of wall maps, Banerkeller's relief maps, and Spruner's historical atlases and maps.

I must not omit a long visit from Professor Longfellow. He came to introduce an English lady. She was young, gifted, highly educated, full of life, and very desirous of seeing young America at school. She was especially desirous of witnessing the phenomena of co-education, which at that time to an English mind was something preposterous. After watching the general conduct of the school in session and at recess, she noticed, at the close of recess, the boys filing to the recitation rooms after their teachers. These lady teachers were much less gifted in stature and avoirdupois than in mind, heart, and ability to teach. "What! what!" she exclaimed, "Where are those great boys going?" "To recitation," was the reply. "Those great boys to recite to those little girls? I must see that;" and off she ran across the room swift as Camilla scoured the plain. She gave strict attention to the recitation, and admitted that American boys surpassed their English cousins in demeanor and courtesy.

The bearing of the school committee toward the teachers in those days may be best seen in the fact that, at the semi-annual examinations, the whole committee dined with the member under whose special charge was the school which had been examined. At these dinners the master of the school was always an invited guest. I have seen far more ostentatious entertainments, more imposing ceremony, more of the fuss and form in which grown-up children pride themselves, but never more generous hospitality, never heard more of the wit, wisdom, and instruction in which gentlemen and scholars delight, than at those festive boards. From them the best culture of the city found its way to the school-rooms, and they became an important element in the work which the public school is meant to accomplish.

To encourage the establishment of school libraries, the legislature of Massachachusetts had for some years given to the towns of the state a limited sum upon their compliance with certain conditions. These conditions of the law were complied with by the city council, and the sum of about eight hundred dollars was thus obtained for school libraries. This sum was mainly appropriated to the high school, and, in addition to the donation of books by individual citizens, enabled the school to enjoy the benefit of what at that time was considered a large public school library. The library needed a catalogue. We had at that time among our high school teachers one of the best scholars that Cambridge could boast, Mr. Ezra Abbot, afterwards assistant librarian in the library of Harvard College and professor in the Divinity School. Mr. Abbot at his coming found us at work upon a catalogue, He joined hand, heart, and head with us in the work; and his head was soon found to be so much the best that by the great law of evolution — the survival of the fittest—the catalogue passed entirely into his hands. It was completed with great labor, published at the expense of the city, and was, I make bold to say, the best specimen of bibliography that had been published in the country.

It would be pleasant, and, indeed, it is almost obligatory, to make further mention of individual aid and service in addition to that which was formal and official, to recall the ardent sympathy and wise co-operation of President James Walker, his prompt and hearty adoption of my suggestion to restore the Hopkins fund to its original function in the public school; of Professor Benjamin Pierce, whose visits to the school were always an inspiration and an enforcement of the lesson that transcendent learning and ability may be associated with perfect simplicity and kindness. A personal allusion may, perhaps, be pardoned. In the autumn of 1847, on one of our lovely September days I was at work in the Worcester high school, of which I was at that time the master. A rap summoned me to the door, where I met a stranger, a very fine-looking gentleman, who said that he had come to inform me of my election to the mastership of the Cambridge high school. That gentleman, Dr· William W. Wellington, I feel justisfied in saying, has done more and better work in your schools than any other single citizen. He is the Nestor of our educational life, and, like his Homeric prototype, has seen two generations of speech-gifted men and is now living in the third. His modest courage and sage counsel were prized by the worthies of former days, and may yet serve you in important crises. He did a useful work in 1848 in extending the arithmetical method of Colburn to the highest classes in your schools. A reminiscent volume from him would be a cynosure for your committees in the coming century.

Perhaps no event was more important in the history of the period which I am considering than the introduction of music into the schools. This branch is now so commonly and successfully taught that few can realize the difficulties attending its introduction. First came the expense, a difficulty surmounted not without earnest effort; then came the novelty of the movement; what never had been, never ought to be; the evening singing schools had always worked well; it was true wisdom to let well enough alone. When this powerful logic was refuted there appeared a still greater obstacle, the absence of competent teachers. It was very seldom that the teacher of the evening singing school was competent to organize and administer this great branch of instruction in a graded system of schools. Resort was had to Germany. A gentleman profoundly versed in his specialty—the descendant of I know not how many generations of singers, who began to sing as soon as he began to breathe, to whom breathing and singing were equally natural, the piano his plaything, the organ his idol, witty, well educated, sarcastic if he chose to be, full of life and energy, accustomed to obey and to be obeyed without question or hesitation—was placed face to face in the Cambridge schools with well-bred but bashful pupils, of whom the majority had never struck a note of music, whose ears had been trained by psalm tunes on Sundays, by the drum and fife at May training and the Brigade band on commencement days—the discipline of Frederic the Great in the presence of a Massachusetts town meeting. The sequel need not be told. It was tyranny on the one side and stupidity on the other; such were the charitable interpretations of what was naturally to be expected under the circumstances. The failure was complete, and nobody was to be blamed. All meant well but did not understand each other. The music ceased for a short time, but was resumed for some months under the voluntary and gratuitous instruction of Mr. Benjamin W. Roberts of the Broadway grammar school. He poured oil upon the troubled waters, and brought the year to a pleasant and successful musical close. No serious harm had been done. Experience had taught a useful lesson, often repeated since, that Americans must govern America.

In this perplexity Providence came to our relief. To use the language of our fathers, a man was "raised up" to lead us out of our difficulties and to give us music. We found this man not in Germany, France, or England, but in our poor New England Israel, a graduate of Harvard College, as well versed in human nature as in music, and that is saying a great deal; not requiring or attempting impossibilities, and never maintaining that inability to sing was a sure proof of total depravity. Under the instruction of Mr. Nathan Lincoln, supported by a willing and efficient corps of grammar masters, the schools of Cambridge have gained an enviable distinction, and shown how much music may contribute to our national happiness and character.

It has happened more than once in the history of our New England high schools that they have been hampered in their progress by want of sympathy on the part of the masters of the grammar schools. It was just the opposite in Cambridge. The hearty co-operation on the part of these gentlemen was an important element in whatever success was attained at the high school. It is among the pleasantest recollections of those days that, on the days of examination for admission to the high school, the grammar masters would be waiting at the close to learn the success or failure of their pupils—to rejoice with them that could rejoice and weep with them that wept. Nor did their interest cease on the admission of their pupils to the high school. A visit to the school from a grammar master would have quite a magnetic influence, and bring to him from all the classes his former pupils with grateful remembrance of former days.

Ten years ago I had occasion to say "it would be difficult to produce from the history of education in Massachusetts a more interesting chapter than that which should properly record the progress of the schools of Cambridge during the first decade after the adoption of the city charter." Never were better men chosen for the school committee. From the University to the primary school there was a unity of feeling and an earnestness of purpose which bound all in the pursuit of a common object; and that object was felt to be one of the chief ends of human society. And it is no exaggeration to say that then the idea of Huxley was fully realized — that a course of public education should be "like a ladder standing in the gutter with its top resting in the university." And I now feel inclined, in view of the long service rendered by the University to the schools, and the liberal contributions of the schools to the college catalogue in return, to look upon Cambridge as a kind of educational Bethel, and find in her a realization of the patriarch's vision of angels ascending and descending between Earth and Heaven.

The slight value attached to school history is a marked feature in our educational work. I have been surprised, when making inquiries of excellent teachers respecting the records of their schools, to be told that no record existed beyond the dryest statistics. This is not true of our cotton and woolen mills, of our modes of transportation, nor of any great economic or industrial enterprise. It is only in the training of the human mind that we leave no traces behind. Our hospitals record with scientific accuracy all important cases whether of surgery or of the treatment of disease, but we look in vain to our schools for similar records of success or failure, in method and execution. The history of failure may be instructive as well as that of success. The failures of one age have often proved the guides of the next.

In this respect Cambridge has a marked preëminence. The catalogue of your high school, prepared with great labor and accuracy by Mr. William F. Bradbury, the master of your Latin school, is by far the best work of its kind which has been published in the state. But there exist documents and collections for a much more extended history. You can determine the programme of every day's instruction in your high school for the last forty years. These documents, so carefully collected and arranged by one of your ablest teachers, Miss Mary F. Pierce, afford materials for a volume of priceless value. Just think how that collection would be prized a hundred years hence. Richard Porson once said that he would give more for a single copy of a daily newspaper published in Athens, had such a paper been published, than for all that has come down to us, as a means of determining the civil and social life of that renowned city. Think of the sensation that would be produced in the American Athens, were it announced from the American college in ancient Athens that full records of the Academy, the Lyceum, the Porch and the Garden, had been discovered, that the programmes of Plato, Aristotle, Zeno, and Epicurus, with their methods, had all been found.

We are not working or living for this generation alone. Whether we mean it or not, we are working for those that shall come after us. The Divinity that shapes our ends has connected us with posterity by a law as inevitable as that of gravity. Work for that posterity cheerfully and with a purpose, and not merely by compulsion. In the familiar phrase of the day, you now take a new departure. You take perhaps the foremost place in secondary education in the state.

Could Edward Everett have foreseen, at the dedication in Amory street in 1848, the building in which we are assembled, its laboratories, physical and chemical, its lecture-rooms, its apparatus, its library, its sanitary provisions, its manual training school with its complete equipment, the public library (there was not at that time a public library in Massachusetts) with all its treasures of wisdom and knowledge, these ample grounds which the suns and showers of a few summers will clothe with verdure, shrubbery, and shade—could he have foreseen all this varied endowment into which enter all the forces and factors of our modern civilization — where the cunning hand, the feeling heart, the reasoning head, the whole immortal soul, can learn and practice whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report, until it attain to the symmetry and stature of a perfect Christian manhood, he would have exclaimed, in the language of Gray,

> "Visions of glory, spare my aching sight;
> Ye unborn ages, crowd not on my soul."

The spot where we stand is holy ground. The statue of John Harvard, the Soldiers' Monument, the Washington Elm, and Memorial Hall are all in sight. The very air is redolent of Puritan and patriotic influences, of all the fond, sacred, and inspiring memories that cluster around an ancient seat of learning. Dunster and Corlett, and the great cloud of worthies who have followed in their train — the Mathers and the Adamses, the Channings and the Wares, the Quincys and the Everetts, the Shaws and the Sumners, are in deep and anxious sympathy with the service of this hour.

Nor let us forget a younger throng — less known to fame but not less welcome here. Those who claim academic kinship here must have their claims allowed — the alumni and the alumnæ of this school from every sphere of honorable service, from the counting-room, from the workshop, from the school-room, from the professor's chair, from the executive chair of the commonwealth, from the bar, from the pulpit, from the prairies, from the Pacific coast, from Burmah, from Bulgaria,* from the dread ordeal of battle, from the Wilderness, from Newbern, from Port Hudson, from the decisive field of Gettysburg,--Stearns and Brown, Courtis and Hastings, Tucker and Fenton, the Smarts, Gustavus and William, *par nobile fratrum*—are certainly here to join their old companions in arms in enshrining in the halls of their alma mater the banner under which they fought and fell. Their forms and features are as distinct before me as any in this audience, and

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*Two of the early graduates of this school demand a passing notice. William Ward Merriam, graduating in the class of 1851, at Harvard in the class of 1855 and at Andover in the class of 1858, entered the service of the American Board of Foreign Missions, and was stationed at Philippopolis in Bulgaria. He married Miss Susan Dimond of the first class of the school, a lady of great promise. After four years of very successful service, while returning from an official visit to Constantinople and travelling in a private carriage, they were attacked by robbers. Mr. Merriam was killed, and Mrs. Merriam survived the shock but a few days. Miss Dimon's name does not appear in the catalogue, as she graduated before diplomas were given to any except those who entered college.

> "With us their names should live
> Through long succeeding years,
> Embalmed with all our hearts can give,
> Our praises and our tears."

I have spoken of this occasion as marking a new departure in your educational history. Permit me to allude more directly to one feature in this change. Mr. Rindge, in founding the manual training school, has wisely placed it in close connection with the public high school. In doing this he has recognized one of the strongest tendencies of our modern civilization as well as embodied some of the noblest conceptions of classic mythology. He has not only symbolized, but in emphatic words has affirmed, the dignity of labor, the close connection between the elegant and the useful arts. He is wiser than Plato. Plato excluded the useful arts from his Academy. Mr. Rindge has placed Vulcan in equal honor with Apollo and and the Muses. When Jupiter was about to give to the world the Goddess of Wisdom, it was the aid of Vulcan that he implored; when Homer was to give to the world the immortal shield — "the gaze of wondering ages, and the world's amaze"— he sent Thetis, not to Delphi and Parnassus, but to the *lame artisan* in heaven's far-beaming brazen mansions, obscure in smoke, his forges flaming round, to use Pope's fine paradox. He had been thrown by angry Jove sheer o'er the crystal battlements, but, restored to his native Olympus,

> "His hand was known
> In heaven by many a towered structure high,
> Where sceptred angels held their residence
> And sat as princes."

There is no one feature in this grand educational symposium more pleasing than the honorable place assigned to the stithy — the mingling of the useful with the agreeable, the union of beauty and of strength.

Many years ago Horace Mann said to me, "When I became secretary of the board of education in 1837 I found three great faults or breaks in the educational work of the state, and these were Cambridge, Amherst, and Williamstown." I have no data from which to judge of Amherst and Williamstown, but in regard to Cambridge I venture the opinion that Mr. Mann's statement is rather too strong. It is undoubtedly true that the colleges were not foremost in the great educational revival which marked that period. But if the colleges as such were slow to act, their graduates were the pioneers in this revival. The claim has been made for Cambridge that she was first to adopt a gradation for her schools. This claim can hardly be sustained. The movement for the classification of the public schools in the town of Cambridge dates, I believe, from 1834. Worcester had a classified system in full operation some years earlier. But if Cambridge was not first, she was in the very first rank. The Rev. Artemas B. Muzzey was a very earnest laborer in this movement, and his influence was felt far beyond the town and even beyond the county. Whatever may have been the condition of the Cambridge schools in 1837, there is no doubt of their rank, whether relative or absolute, in 1892. For twenty-five years we have been celebrating our local and national centennials, and we are now amid the stir, bustle, and controversies of our quadricentennial, to which we invite the attention and patronage of the world. This great Olympiad of the nations occurs so near the close of the century that the two events may be regarded as practically coincident. It is not for me to attempt any comparison of Cambridge with other cities and towns, but I may say a word about the Cambridge of 1800 and the Cambridge of 1892. In his address at the high school exhibition in 1851, the first year of the present half century, Mr. Everett gives, perhaps, the best account of the condition of the public schools at the beginning of the century, the period of his own boyhood, that can be found in the same compass. His remarks do not apply to Cambridge specially, but to the best schools of the state as well. This address, in connection with your own official reports and the private collection already referred to, will enable you to make up your balance sheet for the century with greater completeness and exactness, I firmly believe, than any other city or town in the commonwealth. It is fitting that it should be so. You boast the oldest and best endowed university in the New World; your secondary and primary schools are every way worthy of their neighborhood. The *personnel* of your school organization, from superintendent to janitor, from Latin school to primary, is unsurpassed. Your school committees for fifty years have been unequalled, and were never better than today. The name of Rindge will henceforth be in honored fellowship with that of Harvard. Your municipal bounty will be in harmony with private liberality. The bare name of Cambridge gives you distinction, but it also involves obligation. Given at first in filial gratitude for the culture received from the older Cambridge, it suggests the names of Bacon and Newton, of Cromwell and Milton, the greatest names in English science, literature, and statesmanship. You will be true to your great inheritance, you will guard and complete on the banks of the Charles what Harvard, Hooker, and Shepard brought from the banks of the Cam.

REMARKS OF EDWARD EVERETT

AT THE DEDICATION OF THE SECOND HIGH SCHOOL BUILDING, JUNE 27, 1848.

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MAY IT PLEASE YOUR HONOR:

I RISE, in obedience to your call, to express my sympathy with you and our friends around, on this interesting occasion, but without having it in my power to add anything of importance to what has been so appropriately said by you and other gentlemen who have preceded me. And I must first express my thanks to the reverend chairman of the committee on the High School, (Mr. Stearns) for his obliging notice. He did no more than justice to the sincere interest I feel in the occasion. Connected as I am with another place of education, of a kind which is commonly regarded as of a higher order, it is precisely in that connection that I learn to feel and appreciate the importance of good schools. I am not so ignorant of the history of our fathers, as not to know that the spirit which founded and fostered Harvard College is the spirit which has founded and upheld, and will continue to support and cherish, the schools of New England. I know well, sir, that universities and colleges can neither flourish nor even stand alone. You might as well attempt to build your second and third stories in the air, without a first floor or a basement, as to have collegiate institutions without good schools for preparatory education, and for the diffusion of general information throughout the community. If the day should ever come (which I do not fear in our beloved country) when this general education shall be neglected, and these preparatory institutions allowed to perish; if the day should ever come (of which I have no apprehension) when the schools of New England shall go down,—depend upon it, sir, the colleges will go with them. It will be with them as it was with the granite warehouses the day before yesterday in Federal Street, in Boston; if the piers at the foundation give way, the upper stories will come down in one undistinguished ruin.

I anticipate no such disaster, Mr. Mayor, though it must be admitted that we live in an age of revolutions, of which every steamer brings us some fresh and astonishing account. But our revolutions are of a more auspicious character, and it occurred to me as I was coming down with your worthy associate (Mr. Whitney) and your respected predecessor, (Mr. Green) to whom we have just listened with so much pleasure, that we were traversing a region in which a revolution commenced no very long time since, and is still in progress, far more important for us and our children than any of those which have lately broken out, and are now convulsing the continent of Europe. I do not now refer to the great political and historical events of which this neighborhood was the theatre, and of which the monuments are in sight from these windows; but to a revolution quiet and silent in its origin and progress, unostentatious in outward manifestation, but importing greater change and warranting brighter hopes for most of those who hear me, for our young friends before us, than any of the most startling events that stare upon us in capitals in the columns of the newspapers, after every arrival from Europe. Mr. Stearns has beautifully sketched some of the most important features of this peaceful revolution.

When I entered college, Mr Mayor, (and I believe I shall not tell the audience quite how many years ago that is; you can do it, sir, but I will thank you not to,) there were a few straggling houses, shops, and taverns along the Main Street at Cambridgeport. All back of this street to the north, and I believe almost all south of it to the river,—the entire district in the centre of which we are now assembled,—was in a state of nature; pretty equally divided between barren pasturage, salt marsh, and what I must admit had no mean attraction for us freshmen, whortleberry swamp. Not one of the high roads had been cut, which now traverse the plain between Main Street and the old road to Charlestown. East Cambridge did not exist even in the surveyor's imagination. There was not a church nor a public school east of Dr. Holmes's and Old Cambridge Common; and if any one had prophesied that within forty years a population like this would cover the soil,—with its streets, and houses, and gardens, its numerous school-houses and churches, its conservatories breathing all the sweets of the tropics, its private libraries, equal to the choicest in the land, and all the other appendages of a high civilization,—he would have been set down as a visionary. But this change, this revolution, has taken place even within the lifetime of the venerable lady (Mrs. Merriam) alluded to in such a pleasing manner by Mr. Stearns; and we are assembled this morning to take a respectful notice of what may be called its crowning incident, the opening of a High School in that primitive whortleberry swamp. I believe I do not overstate matters when I say, that no more important event than this is likely to occur in the course of the lives of many of those here assembled. As far as our interests are concerned, all the revolutions in Europe multiplied tenfold are nothing to it. No, sir, not if the North were again to pour forth its myriads on Central and Southern Europe, and break up the existing governments and states into one general wreck, it would not be an article of intelligence at all so important to us on this distant shore as the opening of a new school. No, my young friends, this is a day which may give an auspicious turn to your whole career in life; may affect your welfare, not merely for time, but for eternity.

There is certainly nothing in which the rapid progress of our country is more distinctly marked than its schools. It is not merely their multiplication in numbers, but their improvement as places of education. A school forty years ago was a very different affair from what it is now. The meaning of the word is changed. A little reading, writing, and ciphering, a very little grammar, and for those destined for college a little Latin and Greek, very indifferently taught, were all we got at a common town school in my day. The range was narrow; the instruction superficial. In our modern school system,—taking it as a whole, composed of its several parts in due gradation, namely, the primary, the district, and the high school,—the fortunate pupil not only enjoys a very thorough course of instruction in the elementary branches, but gets a good foundation in French, a good preparation for college, if he desires it, according to the present advanced standard of requirements; a general acquaintance with the applied mathematics, and the elements of natural philosophy; some suitable information as to the form of government and political system under which we live; and no inconsiderable practice in the noble arts of writing and speaking our mother tongue.

It might seem, at first, that this is too wide a circle for a school. But the experience of our well-conducted schools has abundantly shown that it is not too extensive. With faithful and competent teachers, and willing and hearty learners, all the branches I have named, and others I have passed over, can be attended to, with advantage, between the ages of four and sixteen.

Such being the case, our school committees have done no more than their duty in prescribing this extensive course, and furnishing to master and pupil the means of pursuing it. I cannot tell you, sir, how much I have been gratified at hastily looking into the alcove behind us. As I stepped into it this morning, Mr. Smith, the intelligent master of the school, pointed out to me the beautiful electrical machine behind the door, with the just remark that my venerable predecessor, President Dunster, would not have known what it was. No, sir, nor would the most eminent philosopher in the world before the time of Franklin. Lord Bacon would not have known what it was, nor Sir Isaac Newton. Mr. Smith reminded me of the notion of Cotton Mather, (one of the most learned men of his day,) that lightning proceeded from the prince of the power of the air, by which he accounted for the fact that it was so apt to strike the spires of churches. Cotton Mather would have come nearer the truth, if he had called it a shining manifestation of the power and skill by which the Great Author of the universe works out some of the mighty miracles of creation and nature. And only think, sir, that these newly discovered mysteries of the material world, unknown to the profoundest sages of elder days, are so effectually brought down to the reach of common schools in our time, that these our young friends, before they are finally dismissed from these walls, will be made acquainted with not a few of the wonderful properties of the subtile element, evolved and condensed by that machine, and which recent science has taught to be but different forms of one principle, — whether it flame across the heavens in the midnight storm, or guide the mariner over the pathless ocean, or leap from city to city along the continent as swiftly as the thought of which it is the vehicle, — and which I almost venture to predict, before some here present shall taste of death, will, by some still more sublime generalization, be identified with the yet hidden principle which thrills through the nerves of animated beings, and binds life to matter by the ties of sensation.

But while you do well, sir, in your High School to make provision for these advanced studies, I know that as long as it remains under its present direction, the plain elementary branches will not be undervalued. There is, prehaps, a tendency that way in some of our modern schools; I venture to hope it will not be encouraged here. I know it is not to be the province of this school to teach the elements; but I am sure you will show that you entertain sound views of their importance. I hold, sir, that to read the English language well, that is, with intelligence, feeling, spirit, and effect; to write, with despatch, a neat, handsome, legible hand, (for it is, after all, a great object in writing to have others able to read what you write;) and to be master of the four rules of arithmetic, so as to dispose at once with accuracy of every question of figures which comes up in practical life, — I say I call this a good education; and if you add the ability to write pure grammatical English, with the help of very few hard words, I regard it as an excellent education. These are the tools. You can do much with them, but you are helpless without them. They are the foundation; and unless you begin with these, all your flashy attainments, a little natural philosophy, and a little mental philosophy, a little physiology, and a little geology, and all the other *ologies* and *osophies*, are but ostentatious rubbish.

There is certainly no country in the world in which so much money is paid for schooling as in ours. This can be proved by figures. I believe there is no country where the common schools are so good. But they may be improved. It is not enough to erect commodious school houses, or compensate able teachers; and then leave them, masters and pupils, to themselves. A school is not a clock which you can wind up and then leave it to go of itself. It is an organized living body; it has sensibilities; it craves sympathy. You must not leave the school committee to do all the work. Your teachers want the active countenance of the whole body of parents,—of the whole intelligent community. I am sure you, Mr. Smith, would gladly put up with a little injudicious interference in single instances, if you could have the active sympathies of the whole body of parents to fall back upon in delicate and difficult cases, and to support and cheer you under the burden of your labors, from day to day. I think this matter deserves more attention than it has received; and if so small a number as thirty parents would agree together to come to the school, some one of them, each in his turn, but once a month,—or rather, if but twenty-five or twenty-six would do it,—it would give your teacher the support and countenance of a parent's presence every day; at a cost to each individual of ten or eleven days in the year. Would not the good to be effected be worth the sacrifice?

I have already spoken too long, Mr. Mayor, and will allude to but one other topic. In most things, as I have said, connected with education, we are incalculably in advance of other days; in some, perhaps, we have fallen below their standard. I know, sir, old men are apt to make unfavorable contrasts between the present time and the past; and if I do not soon begin to place myself in that class, others will do it for me. But I really think that in some things, belonging, perhaps it will be thought, to the minor morals, the present promising generation of youth might learn something of their grandfathers, if not their fathers. When I first went to a village school, sir, — I remember it as yesterday; I seem still to hold by one hand, for protection (I was of the valiant age of three years,) to an elder sister's apron; with the other I grasped my Primer, a volume of about two and a half inches in length, which formed then the sum total of my library, and which had lost the blue paper cover from one corner (my first misfortune in life)—I say it was the practice then, as we were trudging along to school, to draw up by the roadside if a traveller, a stranger, or a person in years, passed along, and "make our manners," as it was called. The little girls courtesied, the boys made a bow; it was not done with much grace, I suppose; but there was a civility and decency about it, which did the children good, and produced a pleasing impression on those who witnessed it. The age of school-boy chivalry is past, never to return. These manners belong to a forgotten order of things. They are too precise and rigorous for this enlightened age. I sometimes fear the pendulum has swung too far in the opposite extreme. Last winter I was driving into town in a carriage closed behind, but open in front. There were in company with me the Rev. President Woods, of Bowdoin College, Maine, and that distinguished philanthropist and excellent citizen, Mr. Amos Lawrence. Well, sir, we happened to pass a school-house, just as the boys (to use a common expression) were "let out." I suppose the little men had just been taught within doors something about the laws which regulate the course of projectiles, and determine the curves in which they move. Intent on a practical demonstration, and tempted by the convenient material, I must say they put in motion a quantity of spherical bodies, in the shape of snowballs, which brought the doctrine quite home to us wayfarers, and made it wonderful that we got off with no serious inconvenience, which was happily the case. This I thought was an instance of free and easy manners, verging to the opposite extreme of the old-fashioned courtesy which I have just described. I am quite sure that the boys of this school would be the last to indulge in an experiment attended with so much risk to the heads of innocent third persons.

Nothing remains, sir, but to add my best wishes for teachers and pupils. You are both commencing under the happiest auspices. When I consider that there is not one of you, my young friends, who does not enjoy gratuitously the opportunity of obtaining a better school education than we could have bought, Mr. Mayor, when we were boys, with the wealth of the Indies, I cannot but think that each one of you, boys and girls, will be ready to say with grateful hearts: "The lines have fallen to me in pleasant places; yea, I have a goodly heritage."

To you, Mr. Smith, we wish entire success. The community looks to you with confidence, to add to your high reputation as an instructor, and commits to you these its treasures, with the full assurance that you will be faithful to the trust.

HISTORY OF THE LATIN SCHOOL.

BY WILLIAM F. BRADBURY, HEAD MASTER OF THE SCHOOL.

In school committee, November 12, 1874, the following resolution was adopted:

"That, in view of the present crowded condition of the high school building, and of the expected increase of the school with the growth of the city, it is advisable that immediate steps be taken for the division of the school into Classical and English departments, and for the removal of the Classical department to a suitable building to be erected in Ward One." No further action was taken, and the two departments of the high school, the Classical and the English, went on together as before.

In the spring of 1885, when the high school had four hundred forty-nine pupils, or nearly fifty per cent more than the number that the building could accommodate, it was again voted to divide the high school into a Latin school and an English high school.

At this time, there were in the three classes that made up the Classical department seventy-nine pupils. How many there were in the fourth and fifth classes who would ultimately take the Classical course was a matter of conjecture. Many of the pupils in these two classes had not decided what course they would take. Thus the number that would go to the Latin school was undetermined, but was estimated variously from one hundred thirty to one hundred seventy.

In the summer of 1885 the city took possession of the Lee street church, and proceeded to remodel it for the Latin school.

During the fall and winter of 1885–86 the building was made ready, and during Friday and Saturday, February 26 and 27, two of the coldest days of the season, the desks, books, and other necessary things were moved into the former church.

On Monday, March 1, 1886, the Cambridge Latin school, without losing a single recitation in the removal, began its existence with one hundred nine pupils and six teachers.

Until the following September the head master of the Latin school was also head master of the English high school. He heard each day two classes in the Latin school and one in the English high school, dividing the rest of the time between the schools as necessity seemed to require.

In March, 1887, the number of teachers was increased by one, a male teacher in physics. In September, 1887, the number of pupils had increased to two hundred forty. The building could not contain so many, and a colony of about sixty, with two additional female teachers, took possession of rooms in the Harvard grammar school building.

Thus within a year and a half of the birth of the Latin school it had by about $33\frac{1}{3}$ per cent outgrown the provision made for it. During the year 1888–89 the Latin school colony occupied two rooms in the city building at Brattle square; in 1889–90 and 1890–91 it was in the Harvard grammar school building again; and in 1891-92 it was in the old city hall.

Early in 1892 the English high school moved into its new building, and the city council began repairing and fitting up the former high school building for the Latin school. The work was begun the first of May and pushed so rapidly that in September, the Latin school began its year's work in the renovated building. The city had expended nearly $20,000 for repairs and furniture.

The chief changes were in removing the partitions in the hallways, and remodelling the dressing rooms, putting in new heating and ventilating shafts, new sanitary arrangements in the basement, and new floors throughout.

As you enter the building in front you come at once into a spacious hall. Against the wall opposite stands a large case partly filled with valuable geological specimens presented to the school by William A. Munroe, Esq., chairman of the committee on high schools.

At the right is a spacious dressing room for the boys, and one for the male teachers; at the left an exactly similar dressing room for the girls, and a reception room, carpeted and handsomely furnished, for visitors. In the second story there are similar dressing rooms at the right and left for the boys and girls, and on the left a well-furnished, carpeted retiring room for the female teachers. The space on the right, corresponding to the retiring room, is utilized for the storing of apparatus and as a private room for the teacher of physics.

Corresponding to the case in the hall on the first floor, is another large case with the upper shelves filled with books and the lower with mineralogical and other specimens, also given by Mr. Munroe. On this floor is a room for the department of physics, excellently well-fitted for this purpose.

In the third story the room originally intended as a head master's room, very much larger now than when the building was built, has been fitted up as a library and a head master's room. It is carpeted and well furnished. Six of the main school rooms have been made narrower by about three feet in order to make room for the heating and ventilating pipes. This arrangement left space in each of these rooms for a large closet. The large hall in the third story is furnished with opera chairs, and is used for assembling the school for devotional exercises each morning and for singing on Friday. It will seat some three hundred pupils.

Into this building the Latin school went on the first day of the school year, September 6, 1892. On the 21st of September, for the first time in its existence of six years and a half, the pupils of the Latin school were assembled together for morning devotional exercises. For the first time the pupils together met their teachers face to face; for the first time the head master had an opportunity to speak to them as a body. Since then it has been the custom for the school to meet together for the morning exercises.

Until the English high school moved to its present building in February, 1892, it had had no place where the pupils could assemble together for twenty years.

Music, which, partly at least for lack of an assembly room, had been discontinued in the high school since 1872, when the large hall was cut up into school rooms, again became part of the regular work of both the Latin school and the English high school.

The course of study for the Latin school for the most part is determined by the requirements for admission to Harvard College. Since the birth of the Latin school these requirements have changed but little. Arithmetic was omitted from the requirements after 1886. The experimental method in physics was begun in 1887. In the fall of 1888 German was introduced as an elective for those who preferred it to French, and a special teacher in German was appointed.

In September, 1892, the head master was authorized at his discretion to form a class in solid geometry and trigonometry with its application to surveying.

The course of study covers five years, but it is so arranged that those who are capable and willing to work can complete the course in four years. The number completing the course in four years since the school was established in 1886 is thirty, the number of graduates being one hundred seventy.

At present, March, 1893, of the two hundred fifty pupils belonging to the school thirteen are trying to do the work in four years.

Every year the opportunity is given to those entering to take an extra study with a view to completing the course in four years. It usually happens that twenty or twenty-five begin, but the great majority stop, or are stopped, after the first two or three months' trial. Last September twenty-one began, but only five of this number now remain.

Different from any other Latin school in existence in 1886, the Cambridge Latin school is a mixed school. From 1856 to 1878, a period of twenty-two years, only three girls completed the full Classical course. Each of these girls in scholarship ranked far above any other member of her class.

It was about this time that Wellesley and Smith Colleges, the Harvard Annex, and Boston University were established. From this time the number of girls graduating in the Classical department rapidly increased. Of the three hundred eleven pupils graduated since 1878, one hundred and four were girls.

At the present time, March, 1893, of the two hundred fifty pupils belonging to the school, one hundred four are girls.

THE ENGLISH HIGH SCHOOL.

BY FRANK A. HILL, HEAD MASTER OF THE SCHOOL.

The Cambridge English high school had its origin in the English department of the Cambridge high school. The old high school had outgrown its building; its school hall had been cut up into school rooms; all available room in the basement had been exhausted; a colony had been sent out to the Harvard grammar school building; it was becoming difficult to do all the work of the curriculum to advantage; and the problem of what should be done with a school whose efficiency was seriously threatened by its growth was pressing upon the city with greater urgency than ever before. The question of enlarging the school building to solve this problem had been seriously considered, and plans for such enlargement had been drawn up. It was finally decided, however, not without misgivings, to divide the school, to follow in this division the line that separated the classical, or college preparatory, course from the English course, to organize the pupils of the preparatory course into the Cambridge Latin school and those of the English course into the Cambridge English high school, and to transfer the Latin school to the Lee street building.

The first session of the English high school was held on Monday, March 1, 1886. Mr. Frank A. Hill had been appointed head master, but was excused from serving until September, 1886, in order that he might close his school year as principal of the Chelsea high school. The two schools continued, therefore, under the management of Mr. William F. Bradbury until the close of the school year in June.

Of the five hundred pupils of the old high school, three hundred and thirty-five joined the English high school and one hundred and sixty-five the Latin school.

In September, 1888, the "Cambridge Manual Training School for Boys," founded by Mr. Frederick H. Rindge, was opened. It is managed by a board of trustees. The land, the building, and the equipment come from Mr. Rindge, and the current expenses of the school are paid by him. Its advantages are offered free of charge to Cambridge boys who enter the English high school from the Cambridge grammar schools. Pupils from outside of Cambridge are required to pay tuition. A full description of the organization, equipment, course of study, and methods of this school may be found in this report under the heading "Manual Training School for Boys." A class of sixty-two boys immediately availed themselves of the privileges thus offered. The relations of the English high school and the manual training school are novel and delicate. One is public, the other is private. Each is independent of the other in the sense that neither is subject to the control of the other. The pupils who take the manual training course divide their time between the two schools, spending three hours a day in each. The programmes of the two schools, that is, the academic work of the one and the manual work of the other, are intricately interwoven. The pupils are constantly passing from one control to the other. Novel questions, in the nature of the case, must frequently arise. There is no recognized tribunal of appeal, should differences between the two managements prove irreconcilable. So determined, however, has been the purpose to make this unique and interesting combination of institutions a success, so strong has been the spirit of mutual coöperation and concession, that no differences of a persistent character have arisen during the five years that have elapsed since the experiment began. The two schools have worked together as one with gratifying results.

The years from 1886 to the present time have been full of growth and changes for the English high school. Not only has it enjoyed through Mr. Rindge an extraordinary extension of advantages in the direction of manual training, but it has been transferred to its new and beautiful home near the manual training school and the public library.

The membership of the school has increased from three hundred and thirty-five in 1886 to six hundred and forty in 1892. The number of names registered since September, 1892, including those who take manual work, is six hundred and seventy-nine. The largest number belonging at any one time in the fall of 1892 was six hundred and forty. Of this number about one hundred and forty boys were in the manual training school.

The number of teachers in 1887 and 1888 was twelve; in 1889, fourteen; in 1890, fifteen; in 1891, sixteen; in 1892, nineteen. Of these nineteen, four are men. Notwithstanding the increase in the number of teachers, and, consequently, in the absolute expense of the school, the annual expense of instruction per pupil has steadily fallen from 1887 to 1891. It was $43.59 in 1887; $38.69 in 1888; $35.51 in 1889; $34.68 in 1890, and $32.64 in 1891. In 1892, the expense per pupil rose to $33.42. In explanation of these fluctuations, it may be said that the conditions at the old building permitted the pupils to increase in number, but made it practically impossible to increase the teaching force in a corresponding ratio. Since the transfer of the school to the new building, a beginning has been made towards establishing a more satisfactory ratio between the number of pupils and the number of teachers. This beginning is revealed in the slight increase of expense per pupil for 1892, and will doubtless become more obvious in the expense for 1893.

From 1886 to 1892 inclusive, three hundred and forty-five pupils have received diplomas,— one hundred and twenty-five boys and two hundred and twenty girls. Of this number two hundred and eighty-eight completed the four years' course, nineteen the two years' commercial course, and thirty-eight the three years' manual training course. No diplomas have been given for the two years' course since 1888, although the studies of this course remain in the curriculum. The first class to complete the manual training course was that of 1891. The diplomas awarded the boys of the training school are signed by the mayor of the city and the head master of the English high school on the one hand, and by the chairman of the supervising committee of the training school and the superintendent of the training school on the other.

The number of candidates for diplomas in 1893 is ninety-eight, of whom thirty-four are in the manual training school.

The course of study, with the exception of those modifications which have been made in the interests of pupils who wish to enter the Lawrence Scientific School of Harvard University and the Massachusetts Institute of Technology, has been planned with sole reference to the large majority whose schooling must cease with graduation or before. It is essentially the same as that framed for most of the pupils in the two hundred and fifty high schools of the state. It has grown out of the best sense of the public and out of experience. It was not framed with the college in view, and therefore does not connect satisfactorily with the college curriculum. Should any of those who pursue this course aspire to enter college, they find it necessary, no matter how successfully they may have studied, to supplement it by studying additional subjects outside of school, by spending a year or two at the Latin school after graduation, or by making up in college as conditions certain subjects required by the colleges but not provided for in the English high school. It matters not that these pupils have studied some subjects which are not specified in the college admission requirements.

It would be mutually advantageous to the secondary and the higher education if the system of colleges rested as squarely upon the public school system along its entire upper line as it now rests on the academies at Andover and Exeter, the Latin schools of Boston, Roxbury, and Cambridge, and the classical courses of our best public high schools. Should such a general connection and continuity be established, the colleges would find their sources of supply multiplied, while the high schools in their more popular courses would feel the powerful stimulus of the colleges above them.

The serious break between the courses of study in the typical English high school and those of the college is something chiefly for the college to consider. It is not to be expected that Cambridge, after having successfully met the most exacting requirements of Harvard University, and, consequently, of other colleges, in her efficient Latin school, will consent to modify the courses of the English high school for any other purpose than what she conceives to be for the good of its hundreds of pupils who will never enter college.

ENRICHING THE COURSE OF STUDY.

REPORT OF THE SPECIAL COMMITTEE APPOINTED TO CONSIDER THE QUESTION OF SHORTENING AND ENRICHING THE COURSE OF STUDY FOR THE GRAMMAR SCHOOLS.

Scope of the committee's inquiry.—The authority under which this report has been prepared is derived from three votes of the school committee, as follows. On February 18, 1892, it was "*Ordered*, That a special committee of five members, of whom three shall be the members of the standing committee on text books, be appointed to consider the courses of study in the grammar and primary schools with a view to shortening and enriching the program." On March 17, it was "*Ordered*, that the committee on examinations and promotions, with the superintendent of schools, be directed to select a suitable person for special teacher in the primary schools of the city, to act under the direction of the superintendent of schools." On March 17, it was also "*Ordered*, that so much of the annual report for 1891 as relates to the classification and promotion of pupils be referred to the special committee on shortening and enriching the course of study, and also that the committee on rules and regulations be added to the special committee."

The important subjects thus indicated to your committee are: first, the question of the proper supervision of the primary schools; second, the method of promoting from grade to grade and from one class of schools to another; third, the question of rearranging the grades so as to allow the course of study to be completed more speedily; fourth, the question of changes in the primary and grammar school curriculum; and, fifth, the question of improving the methods of teaching in general. It will be seen that these questions concern every grade of instruction from the first year in the primary schools to the last year in the high schools; and any inconsiderate change may seriously affect the organization and efficiency of the whole Cambridge school system.

CHARACTER OF THE CAMBRIDGE SCHOOLS.—Your committee have, therefore, from the beginning of their labors adopted the principle that no change should be recommended without careful consideration, and that the present excellence of the Cambridge schools should not be diminished. The knowledge of the schools which the members of the committee have gained by visiting them, and by comparing them with other systems brought to their attention in the discussions, has led them to believe that our schools are not inferior to those of our neighbors. Cambridge is already, as respects methods and organization, in advance of many cities having schools of the same grades; the curriculum is as extended as has been customary throughout the country; the teachers are intelligent and devoted; the supervision is enlightened and thorough. But for the confidence of the committee in the present corps of teachers no recommendations of further improvement would have been possible. It is only with a staff of good teachers ready to accept and to apply new ideas that needed reforms in the present system can be carried out.

THE INVESTIGATION BY THE COMMITTEE.—The work of the committee has naturally fallen within two fields which have no indispensable connection with each other. The first includes questions pertaining to the organization of the grammar school course; and especially to the time which it requires. For reasons stated below, your committee recommend the abolition of stated examinations in the schools, and the re-arrangement of the grammar school course so as to make it possible for the pupils regularly to go through in four, five, or six years according to their strength and aptitude. These recommendations are based upon the belief that the work now done in the grammar schools may be finished in a shorter time than that set down in the present program. The second group of questions to engage their attention relates to the curriculum, and leads to the question whether the work now done might be so rearranged, and in some parts abridged, as to allow the introduction of new subjects, without increasing the time necessary to complete the course. In dealing with these important questions your committee have endeavored to make themselves familiar with the suggestions of the numerous educators, superintendents, and educational writers who have advocated a shortening and enriching of the course; but, before reaching conclusions, they have carefully consulted persons actually engaged in grammar school education. They have communicated with, or have invited to their meetings, superintendents of schools in which the proposed branches of study are already introduced. They have discussed the new subjects with experts in those subjects. They have twice conferred with the masters of the grammar schools, and once with twenty-five of the grammar school teachers, in order to learn what practical difficulties might be expected in the Cambridge schools. They have constantly kept in communication with the superintendent, and desire here to record their indebtedness to his suggestiveness, wisdom, and interest in the investigation.

No serious change is recommended in this report which has not, in its general features, commended itself to those by whom it is to be carried out. Your committee have not considered the establishment of new schools nor the disturbance of existing standards. They believe that any reform ought to be based upon the general system with which the teachers and the people are familiar, and which has furnished us excellent schools. Throughout the inquiry your committee have been moved by no preconceived ideas; they have had before them simply the object of giving to the Cambridge school children the best education obtainable on the present scale of expenditure.

Should the report of the committee be adopted it would remain only to arrange the new program for the schools and to find and recommend the necessary text-books. Another year, however, it may be well to examine the primary school curriculum to see whether that also may not be improved.

THE PURPOSE OF GRAMMAR SCHOOL EDUCATION. — The objects which teachers must have in mind in educating children are: to set facts before them; to teach them how to do things for themselves; and to teach them how to use their minds. First in time, although not first in importance, comes the acquirement of information. Too much cannot be done to satisfy the child's curiosity to understand the world about him; but the fundamentals of knowledge which every child needs to carry him through life are very few. To read intelligently, to write legibly, to perform the ordinary operations of arithmetic, and to use the mother tongue properly and forcibly — these are the essentials of this side of education. The effort to memorize long series of detached facts is doubtless a valuable training to the mind, but it cannot be expected that the knowledge thus gained will long abide. Some educators are inclined to consider the classification of things and the discovery of their relations as a separate part of education; it is difficult, however, to see how facts can be retained without observing such relations from the beginning.

Next comes the power of performance, the ability to do a thing once learned; and the great value of manual training in lower schools is that it gives this handiness, this power over things.

The chief purpose of education from the beginning to the end is, and must always be, to teach the child to work out his own problems, to use what he knows in the decision of new questions, and to think for himself. In drawing up their recommendations your committee have had in mind the methods and subjects most likely to make children strong and independent, and able to meet life as it comes to them.

FOR WHAT KIND OF PUPILS SHALL WE PROVIDE?—Another serious question which confronted your committee at the beginning of their investigation is, whether to make special provision for pupils who expect to go to the high schools or to college. In many recent discussions of this subject, it has been suggested that a separation ought to be made about the middle of the grammar school course, between those who are to go farther and those who will end their education with the last year of the grammar school. It has been urged that the study of the sciences and the languages needs to be begun early, and that a course suitable for future college students may not be practical for the other pupils. There is danger, especially in New England communities, that the children intended for college will be put into private schools where they can have the desired opportunity of early preparation. Such a removal from the grammar schools of promising children, with the best home influences, is unfortunate alike for those who go and for those who stay; and there is already a serious draft on the Cambridge schools from this cause. Nevertheless, your committee consider that the city in its excellent high schools is dealing most generously with those preparing for college. If there must be a distinction, they prefer to make it in favor of the large majority of children who have no expectation of getting any other education than that of our common schools. In suggesting a mode of shortening the grammar school course, and in recommending new subjects, therefore, they have had in mind simply the training which they consider best for children between the ages of eight and thirteen, the training most likely to make them efficient men and women. At the same time they are convinced that the time thus saved will be a relief to those going to college or to scientific or professional schools, and that the new subjects suggested below are adapted to be the beginning of a higher education as well as to form those who do not go beyond the grammar school.

SUPERVISION OF PRIMARY SCHOOLS.—The first administrative question is that of the supervision of the primary schools. For many years this duty has been performed in part by the principals of the primary schools and in part by the superintendent. The schools are so numerous and so scattered and the principals are so occupied with their own teaching that they are not in a position to maintain a uniform standard; on the other hand, the increase of pupils has been such that the superintendent can no longer keep himself familiar with all the schools. In the whole system, the primary grades are the most important, for in them is the largest number of children, and in them is laid the foundation of all later education. Their efficiency and a proper standard require some additional supervision. The present defect is seen in the painful fact that one fourth of the primary pupils spend at least four years in passing through the three years' course.

The first duty of the committee, therefore, has been to provide some means which will put an end to this waste of the pupils' time, of the teaching force, and of the public money. A year ago a suggestion was made to the school committee that all the primary schools should be grouped under the supervision of the grammar masters; this proposition failed to receive approval. A second plan was to appoint a special teacher for the primary schools; this was adopted, and the school committee authorized the employment of such a teacher. A lady has been found who has had long experience in Cambridge schools, and she has already entered upon her duties. Your committee believe this to be an important reform. The superintendent will thus be relieved; the schools will come nearer a uniform standard; this teacher will make herself acquainted not only with the teachers but with the children and their progress; and by quickening the laggards who now consume more than one-twelfth of all the time of the primary teachers, she will save to the city money enough to pay her salary several times over.

TEACHERS WITHOUT GRADE.— A different system is recommended for the grammar schools; the masters have ample time for supervision; but something must be done to prevent backward pupils from taking an undue proportion of the teachers' time. Your committee believe that the present average number of pupils to each teacher is too large. They suggest, however, that the number be retained as it is or slightly increased, if a special teacher without grade may be appointed in each of the larger schools. Such a teacher could advantageously spend her whole time with small classes of slow pupils who can be advanced by a little individual attention, or of quick pupils who can thus be helped on in the more rapid course. The appointment of such a teacher in each large building would practically increase the capacity of that building, and would thus decrease the necessity for new schoolhouses. Such a teacher is already at work in the Allston school with very happy results, and we recommend that the system be extended to all the large buildings, as fast as the finances of the school committee will allow; and that, wherever practicable, when new teachers are employed for the grammar schools, the work be so arranged that one teacher out of twelve may be appointed without grade.

ABOLITION OF EXAMINATIONS FOR PROMOTION.— The next great question is that of the advancement from grade to grade and from school to school. The old rigid system by which examinations determined the promotions from year to year has already been modified; and the superintendent, in his report for 1891, recommends that general examinations for promotions be altogether abandoned. The importance of written examinations in causing a pupil to review his knowledge and to take account of what he possesses is such that your committee at first hesitated to make a recommendation on this subject. The special inquiry by Dr. Emerson E. White, quoted at length in the superintendent's report for 1891, brings out the fact that examinations for promotion have been abandoned in many cities; and a conference with the grammar school masters has shown that most of them are desirous and all are willing to make promotions depend entirely on the results of term work. By formal examinations an undue pressure is put upon both teachers and pupils; the preparation for examination leads to unnecessary review, and to the disturbance of the regular work of the school; and the system is a draft upon the nervous vitality of all the children, particularly the ablest. So far as the primary schools are concerned, it is hoped that the special teacher will assist the teachers both by improving their methods of instruction, and by adding her judgment to theirs in ascertaining the proficiency of the pupils; so that examinations for promotion will no longer be necessary in these grades.

The value of examinations lies in their impartiality, their definiteness, and their stimulating effect: these advantages may be preserved by holding written exercises or reviews from time to time without previous notice; and the results of such tests will be of great value to the teachers in forming their judgment of the proficiency of the pupils. It has been suggested that a difficulty is here likely to arise from the pressure of parents who are disappointed because their children are not promoted, inasmuch as the teacher will no longer be able to point to a definite record showing that the child is not able to advance. Your committee believe, however, that the record of the daily work and of the occasional unannounced exercises will be better, fairer, and more satisfactory than the old system. The relief from examinations will also make it possible for teachers and pupils so to employ their time that the proportion of failures will be less than at present. Your committee, therefore, recommend the passage of the appended order for the discontinuance of all examinations for promotion from grade to grade in the primary or grammar schools, from the primary to the grammar schools, and from the grammar to the high schools. There is reason to expect that if the recommendation be adopted the whole system of schools will improve, and that from this cause also the advancement of pupils will be made more rapid.

REDUCTION OF TIME. — Abolition of examinations will help to prevent delays, but will not put bright scholars forward faster than at present. To reach this end there is no easier way than to rearrange the grades so as to lessen the average time now spent in the grammar schools. At present the regular grammar school course is six years. There are several reasons for believing that this time is longer than is necessary to bring the average child to the point reached by the graduates of our grammar schools. In some other cities about the same ground is regularly covered in five years; in foreign countries, where the children are no quicker on the average than American children, and are less accustomed to take care of themselves, the same ground is covered in four years. That six years is too long an average is conclusively shown in Cambridge by the fact that thirty per cent of the pupils already go through the course in five years or less.

Your committee have no desire to cut out time profitably spent in school life; they believe that the community would be raised in intelligence and in virtue if every child could be carried to the end of a nine years' course of proper study. Yet it does not appear that there is any advantage in keeping in school such children as, without injury to their health, are able to pass over the field more quickly. The training which they gain from school discipline is more than neutralized by the dilatory habits resulting from having too little to do. The proper standard of efficiency is so to arrange the course that every pupil may make the most of every year. The time, labor and money put into our schools are well applied, but there is a loss from two causes: the bright children are likely to dally, and the dull pupils, by staying too long in school, receive an undue amount of time, that is, of public money. It is remarked that the graded schools in rich and intelligent cities often do less for children than district schools in the country. Where this is the case, it is because teachers are compelled to treat their children all alike, because there is little opportunity of selecting out those able to advance more rapidly and to save them from the bad habits of study caused by keeping the pace of the slower. The pupils who took at least one extra year in the grammar schools in 1890–91 were no less than eighteen per cent of the whole. This is a very serious difficulty, because it applies to the large number of children whose school life is finished early. To the greater portion of the children of Cambridge the grammar schools offer the only opportunity of their lives for thorough intellectual training. If a reform is possible in this respect, it must not only improve the schools but also help the community.

DOUBLE PROMOTION.— Of these difficulties the school committee of Cambridge have been so conscious that for some years they have authorized the process of so-called "double promotion." By this system bright pupils are allowed to omit one year of the course, and at the beginning of a school year to join the second class above that which they leave.

Under this system one-fourth of the grammar school pupils graduate in five years, and five per cent in four years. In practice the pupils do not omit whole years; special classes of "skippers" are made up to do the work of a year and a half in one year, or of three years in two. Cambridge is thus far in advance of most of her sister cities, for the system is a great improvement on the old rigid and unalterable yearly promotion. Still, neither the superintendent nor the grammar school masters are entirely satisfied with it; in spite of the efforts to give the "skippers" special instruction, gaps are left in the curriculum, which are never filled; the tendency is to superficiality, and the pupil progresses at irregular rates, now doing less than he is able and now more than he ought. A variation of this system has sometimes been practiced in Cambridge, and is now regularly established in Brookline; the master promotes by skipping from one class to another at any time when he thinks the pupil ready, without waiting for the end of the year. The practice is advantageous, but it makes it more difficult to gather pupils together in the "skipping classes."

FOUR YEAR AND SIX YEAR GRAMMAR SCHOOL SECTIONS.— Neither of the above plans meets the real difficulty, the irregularity with which the scholars thus promoted do their work. In his last report the superintendent has presented a different scheme to which your committee have given careful attention. The plan is new and has the merits of simplicity and flexibility. Instead of laying out one six years' course for all pupils, the course of study is to be sub-divided in two ways: one division to require six years and one to require four years, but the ground covered to be the same in both cases.

As elaborated by the superintendent, the plan also offers two ways of going through the curriculum in five years. The whole work of the grammar schools is practically divided into two halves or forms. In each form there is to be a two years' course, and, parallel with it, also a three years' course. By taking the two years' course in one form and the three years' course in the other, a convenient five years' course is offered without further splitting up the work.

The principle of this double division is, of course, that the brighter pupils are to be treated differently from others of their age. Your committee are aware of the objections which may be urged against this purpose. It may be said that the accepted principle of democratic equality in public schools is thus disturbed; that to remove the brighter children is to take away one of the principal stimulants and encouragements in school life; that those who need pressure least will thus be exposed to a hothouse system, under which many of them will break down; that the education of the children will not be held up to the same standard for all; and that the new system will make the schools more expensive than at present. Your committee believe these objections to be less strong than they appear, and are convinced that the proposed system is for the advantage of pupils of all grades of intelligence. The city of Cambridge has never accepted the principle that democratic equality requires abler members of the community to learn no more than those less favored by nature. True democratic equality consists in the right of each child to have his mind developed to the extent of his abilities and of his industry.

The difference between the quick and the slower pupils is not one of ability alone; many cases of delay are caused by delicate health, accident, change of residence, or early disadvantages. It is impossible to classify the grammar schools into six grades, so that all the children in each grade shall have an equal degree of advancement. The ideal school would be that in which small classes could be formed and carried forward as fast as they were able safely to advance: such is the district school system, and the nearest approach to it which seems to be in the power of the school committee is that just described. As for the effect on the schools of separating out the bright pupils, it will be observed that in such cases they will simply be transferred to a higher grade, in which their quickness and intelligence will have the same excellent effect as before. It is not the intention of the plan to separate the children into a class of dullards and a brilliant class. It aims simply to group together children of the same degree of advancement, whatever their age or the time they have spent in school. It is expected that transfers of pupils will be made in either direction as occasion may arise; those children only who need the stimulus are to be advanced from the slow moving to the quick moving division. At the end of the lower form such changes can be made most easily. A delicate child may take the three years' course in the first form and then advance more quickly. A pupil who loses a year by illness may make it up by taking the more rapid course. The danger of overwork, your committee believe, will be no greater under the new system. In fact, it furnishes an easy relief for children over-crowded by the quicker course, since they may, at any time, be shifted to the slower.

The objection that the schools will be disturbed and irregular and that the standard will be lowered does not seem well founded. It is reasonable to expect that this plan, which takes account of individual capacities and needs, will improve instruction in all grades, and among all the pupils. The standard will be kept up by the work of the high schools, in which the result of grammar school training can be tested, and in the work of the grammar schools, which will measure the preparation in primary schools.

THE QUESTION OF NEW SUBJECTS.— That the grammar school course may safely be shortened to five or four years for many pupils, is the conviction of your committee; they are no less convinced that it is desirable to increase the interest both of six year and of four year pupils by putting new subjects into the curriculum; and that the necessary time can be found. Your committee have carefully examined this question with the aid of the grammar masters and the superintendent, and they see little opportunity for omissions from the present course; the education offered by the schools has steadily improved, and the curriculum has already been carefully drawn; there is no general class of subjects which it would be safe to omit. Nevertheless it is possible to save time in several different ways. In the first place there may be a rearrangement of the work in mathematical studies and language, which will permit the introduction of more advanced branches of those subjects. In the second place, the proposed abolition of examinations will relieve both teachers and pupils from much hard and undesirable work. In the ninth grade of the grammar schools, for instance, it has been customary to spend about twelve weeks in reviews preparatory to entering the high school; that time plainly might be spent to better advantage, especially for children who end their course at that point. The teachers also agree that time may be saved by presenting subjects more simply, with fewer and less complicated problems; thus, in arithmetic the processes may be learned with simple numbers and short examples. Finally, time may be saved by cutting off some of the repetitions and reviews which till now have been considered necessary, because under the old system a part of the class when promoted was not prepared to enter upon the new work. One thing is certain: the teaching force will heartily coöperate in an attempt to avoid waste of time and to apply the energy of the children more directly.

The selection of proper subjects to occupy the vacant time has been a work of much difficulty; and your committee have felt it wise to suggest few new studies, but rather extensions into higher branches of subjects already taught.

MATHEMATICAL STUDY.— The Association of Colleges in New England on Nov. 6, 1891, made a series of recommendations of new subjects for the grammar schools, among which is the following: "The introduction of elementary algebra at an age not later than twelve years. The introduction of elementary plane geometry at an age not later than thirteen years." The mathematical studies in the present curriculum include mental and written arithmetic throughout the nine grades, and book-keeping. It is not apparent to your committee that any branch of arithmetic now taught in the schools ought to be discontinued; the list has already been curtailed of most of those subjects to which exception has been taken. It does not appear that systematic book-keeping has ever been taught in the schools and your committee, therefore, recommend that the subject be confined to simple personal and business accounts, introduced toward the end of the course. They are of opinion, however — an opinion in which the superintendent and many of the masters coincide,— that much time may be saved in arithmetic by using simple problems and simple processes, and by omitting a part of the reviews which now sometimes occupy the early months of each succeeding year.

The time thus saved in one branch of mathematics may be devoted to other branches. That both algebra and geometry may be taught below the high school is the opinion of many educators, including President Seelye of Smith College, Superintendent Maxwell of Brooklyn, President Eliot, Mr. Tetlow of the girls' high school, Boston, and Mr. Frank A. Hill, master of the English high school, Cambridge. Both subjects are taught in French and German schools, and have been introduced into the Workingman's school in New York. They were both recommended by the Barnard Club, an association of Rhode Island teachers, at their meeting of April 9, 1892. The principal advantages expected from these studies are: a training of the reasoning powers; a gain in the ability to generalize from scattered facts; and an increase of interest caused by taking up mathematics from several different points of view, instead of from one alone.

The educational value of the two subjects is about the same; but if only one can be introduced, geometry seems, for two reasons, more desirable than algebra: it may be made to fit in with drawing and mensuration, and it has practical applications which interest and stimulate the pupils. For instance, some grammar school boys in Winchester have recently made quite a business of measuring the height of their neighbors' houses, at five cents for each survey. The mental training of geometry is also different from that of arithmetic, and the subject has, therefore, a peculiar value for those whose education ends with the grammar schools. The applications of geometry, such as mensuration, the examination and measurement of solids, and the elementary principles of angles, are already taught in many Cambridge schools. Your committee do not feel justified in proposing both algebra and geometry at this time, and prefer to spend the time saved from arithmetic upon geometrical forms and relations (often called observational, constructional, or inventional geometry) leading up to simple demonstrations in plane geometry. A further reason for this choicc is the normal instruction in geometry offered by Harvard University to our teachers. Inasmuch, however, as several teachers are anxious to introduce algebra also, we recommend that any master who so desires may teach the application of elementary algebra to arithmetical problems, thus carrying on the subject in connection with arithmetic.

READING AND LANGUAGE.—The third recommendation of the Association of Colleges in New England is: "The offering of opportunity to study French, or German, or Latin, or any two of these languages, from and after the age of ten years." Before deciding to recommend the introduction of another language, your committee thought it prudent to examine the methods and the time devoted to English. At present the five lower grammar grades study spelling lessons, and great pains is taken to watch and correct the spelling in blackboard and other written exercises. The teachers feel it necessary to keep up this formal drill, and in deference to their judgment your committee recommend only that the regular spelling lessons be confined to the first two-thirds of the grammar course. As to the reading aloud, your committee find little to criticise. The children in most schools read readily and with expression. The subject matter may, however, be improved. In the first half of the course the reading is at present confined to the authorized readers, and it is only in the highest grade that the use of standard authors is required. Your committee, therefore, recommend and strongly urge that throughout all the grammar course the reading of extended extracts from standard English writers be required; and we hope that the time may come when we may dispense with set reading-books, and their places may be taken by masterpieces of English prose and poetry. This recommendation is in accordance with an express desire of the teachers.

For some years the effort has been made to teach grammar chiefly through the reading of good English, and the correction of faults in speech or written exercises. An excellent book combining language lessons with grammar is used in all the grades but the highest as a basis for this study; another small text-book in formal grammar is used in the three higher grades. This seems a reduplication, which may be avoided by dropping the second text-book. Time will thus be gained, especially in the last third of the course, which may be devoted to special language exercises in connection with science and history. The effect will be to improve the instruction in all other departments.

Your committee have carefully considered the question of introducing other languages into the grammar schools. They are convinced that German, French, or Latin would be an excellent discipline, and that the first and third of these languages particularly would assist the pupil to understand his own language, and to express his thoughts more clearly. The practicability of these languages is shown by the fact that French and German are taught in the Workingman's school in New York. Mr. Peterson, Supervisor of the Boston schools, in his report for 1891, suggested that "the demands of a general education or the preparation for special callings may make it desirable for other pupils than those who are preparing for college to begin early the study of foreign languages." The Barnard Club admits the "considerable value of an early study of these languages." Nevertheless, your committee are not able to recommend the introduction of any foreign tongue at present. The school committee have neither the teachers nor the money to carry it out. It is difficult to get thoroughly trained teachers of languages for the high schools at salaries considerably larger than those paid in the grammar schools; and special teachers of any kind would cause an expense which we do not feel justified in recommending. Cambridge is already doing more than many sister cities in her high schools and evening schools. Should the time come when the community feel the want of any of these subjects, your committee believe German to be the most valuable to grammar schools, Latin next in value, and French next.

GEOGRAPHY AND HISTORY.—The present curriculum calls for nine years' study of geography and two of history. In the opinion of your committee it will be better to divide the subject as suggested by President Eliot, grouping physical geography with science, and political geography with history. The teachers are convinced that one year of geography can be spared without loss.

We recommend, therefore, that a course of political geography and history be arranged, with special reference to historical geography, and to the effect of physical conditions upon the growth of nations. This re-grouping will also give room to put in civil government, a subject not at present required, but which several of the teachers have taught briefly on their own responsibility, and which they are anxious to extend. In order to make these studies what they ought to be, the schools should be provided with additional maps and apparatus as fast as the means at the disposal of the school committee will allow.

NATURAL SCIENCE.— Another reason why your committee have not recommended the addition of another language is their belief that the most important new subject is systematic natural science. At present we have only physiology and hygiene, taught in accordance with the requirements of the Commonwealth. In the judgment of the committee, the time saved by slight reductions in spelling and in grammar, by the abolition of examinations, and by increased efficiency throughout the course, had better be given to one or two branches of science carefully taught. This is not a new subject in grammar schools: the programs in Boston, San Francisco, St. Louis, and other cities include a great variety of natural sciences: the Workingman's school in New York has a system of teaching natural science by grouping related subjects, such as botany and zoölogy. Almost all the critics of the present grammar school system urge this reform, and the Barnard Club of practical teachers substantially concurs with the recommendation of the Association of Colleges in New England, which is as follows: "The introduction of elementary natural history into the earlier years of the program, as a substantial subject to be taught by demonstrations and practical exercises rather than from books. The introduction of elementary physics into the later years of the program, as a substantial subject to be taught by the experimental or laboratory method, and to include exact weighing and measuring by the pupils themselves."

The great advantage of science study is that it furnishes a kind of discipline not otherwise obtained in the grammar schools. It teaches the pupil to look for himself, and to describe what he sees. It teaches him system, classification, accuracy, and the love of truth. It furnishes a delightful connection between his studies and the outer world, and it is a preparation for the future life and employment of many of the pupils. Two general methods have been pursued in the grammar schools. One is the San Francisco method, in which there are set lessons on the human body, plants, animals, the phenomena of nature, and minerals; some cities add chemistry and geology. Upon this method as presented in Milwaukee, the superintendent of the schools of that city passes the trenchant criticism: "It is information, not science." Superficial observation of nature can be taught, and ought to be taught, through all the grades of the primary schools and well up into the grammar schools. Your committee are inclined to recommend a different system in the higher grades: that a very few branches be adopted, and that in those the effort be made really to train the child to use his own wits, to come to conclusions for himself, and to record what he sees in such a manner as to improve his use of English. In looking over the available subjects, two seem especially valuable for such a purpose: they are physical geography and physics. The advantage of physical geography is that the materials are all about us, that it is connected with human life, and that it is a foundation for political geography, which in its turn shades into history. A further local advantage lies in the fact that Harvard University has an established professorship of that subject with an unusual collection of apparatus, and is willing to give to the Cambridge teachers the benefit of these advantages. The teachers also are enthusiastic upon the subject, and greatly desire both to be instructed in and to teach the subject as it has been developed in the last decade. It should include some elementary study of the features of the earth. It may include also some study of the phenomena of the atmosphere and their relation to the land and sea.

The question of physics has been the most difficult to decide. The subject has a peculiar value, because it requires, if carried to exact weighing and measuring, a habit of care and accuracy which is nowhere else inculcated in the grammar schools. Of all scientific subjects this is probably the one which will be of most value to boys or girls who are going into any sort of trade or profession which requires dexterity, quickness, and technical skill. It is, therefore, especially desirable that it find a place in the common school system. Your committee have consulted the experts on this subject both in the high schools and Harvard College; and while these gentlemen differ as to the precise methods, they substantially agree that a course in physics can be taught in the grammar schools by the regular teachers and can be followed by ordinary children. The first difficulty is the want of training of the teachers; the second difficulty is the want of apparatus; both seem to have been happily surmounted. The University will offer a normal course in physics, open to Cambridge teachers; and the instructors in physics in the high school will coöperate so far as their time allows. Most of the necessary apparatus can be made in the manual training school. As the subject requires so much preparation, it seems best to postpone its introduction to the beginning of the school year, 1893–94. Meanwhile, if any master finds it desirable to start the subject in his school at once, he should be permitted to do so.

ARE THE RECOMMENDATIONS PRACTICAL? — It will be observed that in the above recommendations the only subjects absolutely new to our grammar schools are physics and algebra. For the first of these a year is to be spent in preparation. The introduction of the second is optional with the master of each school. Geometry is not entirely new; a part of the subject as proposed has already been taught in many of the schools, and it is allied both to drawing and to arithmetic. Physical geography is already taught, and the new arrangement simply systematize and improves the teaching. Standard English writers are rea in many grades, and civil government has been taken up in some schools. The principle which commends itself to the committee is to avoid sudden and far-reaching changes. They believe that no subject above recommended, if taught in a common-sense way, is too difficult for the pupils of the grammar schools. The experience of other places and the judgment of experts and of teachers confirm this view. The introduction of these subjects does not mean additional time spent by pupils. It does mean more harmony between the parts of the course, less wasted time, less review, and more interest.

Can the teachers take up the new subjects?—The question of the ability of the teachers to handle the new subjects is also less serious than it might seem. All the grammar school teachers have studied algebra and geometry, and should have studied physical geography. The recent graduates of the Cambridge high schools have had practice in laboratory physics. Many of the teachers themselves are eager for the opportunity to try something a little more advanced, and your committee have every confidence that the new work will be as well and as faithfully performed as the old. In the more technical subjects, especially physics, special training and special supervision will of course be necessary; but it has seemed in every way desirable to commit the actual teaching to the regular force, rather than to introduce a staff of perambulating supervisors in special subjects.

In order to make the proposed changes practical, the school committee need the aid of the best and most alert teachers. It is not proposed to compel any teacher to undertake a new study, but to call for volunteers from each grammar school to prepare themselves in physical geography, geometry, physics, or literature, as the case may be. The offering by the University of superior normal instruction for teachers, without fee, gives to our teachers an unusual opportunity to improve themselves, and to prepare for higher and better paid positions in the Cambridge school system and elsewhere.

As an aid to such special instruction, and as a means of general improvement of the schools, one new requirement must be made of all the teachers. The present rules do not provide for assembling the teachers except by dismissing all the schools. Occasional exchange of views between the superintendent and the masters and teachers of the grammar schools, between the special teacher of primary schools and the primary teachers, and between the masters and teachers of the high schools, must tend to improve the instruction throughout. Furthermore, if our teachers are to take advantage of the special instruction so freely offered them, they must give at least an hour a week to the lesson. We, therefore, recommend that, as in many other cities, henceforth all the teachers be required, for one hour on Saturday morning, or at some other prescribed time, to attend such teachers' meetings and normal instruction as may seem desirable to the school committee, under the supervision of the superintendent and of the committee on text-books and courses of study.

THE QUESTION OF EXPENSE.— The last objection, that of expense, is one which your committee have most seriously considered. That system is plainly most economical to the community which accomplishes the work of the schools in the shortest time. Every slow pupil who reaches the end of the course a year earlier through the better supervision of the primary schools, or through transfer to the quick-moving division in the grammar schools, saves the city of Cambridge about eighteen dollars. As there are upwards of five hundred children spending an extra year in the schools, the saving from this cause would appear to be more than nine thousand dollars a year. In the judgment of your committee, however, the new system of promotions and grading will not reach the present results with less money, but will reach better results with the money now expended. The yearly growth of the schools calls constantly for a greater expenditure, an expenditure which the tax-payers of Cambridge have always had the public spirit to authorize. Your committee would, however, not feel justified in recommending a system likely to add to the proportional expense of the schools per pupil. It is probable that in many cases the year or two years which will be saved under the new arrangement will come in at a later period; that children who now drop out of the grammar school course will thus be enabled to finish it; that children who now leave at the end of the grammar school course may enter the high schools. If this be the result, it must mean simply that the children who spend the same number of years as at present will have the equivalent of one or two years more of training. Your committee cannot, therefore, hold out a hope that taxes will be reduced by this proposition; but they do believe that the present rate of taxation will produce a higher degree of education.

The new subjects have also been so arranged that no immediate expense will be thrown upon the city. This it is possible to do by the great liberality of Harvard University, which has agreed "to furnish instruction to grammar school teachers next year on Saturday mornings, in geography, geometry, and physics," the details to be settled by the President of the university and the superintendent of schools. This instruction will be without expense to the city of Cambridge, and will save at least the salary of a well-paid specialist, probably $2,000 a year.

The other serious item of expense comes from the cost of the necessary physical apparatus. Superintendent Ellis, of the manual training school, has generously offered to make in that school, during the coming year, such simple apparatus as we may need, the expense not to exceed the cost of materials. We shall also have the advantage of the interest, the counsel, and the assistance of the masters of the high schools and the teachers of mathematics and physics of those schools. There will, of course, eventually, be some additional expense, because the new subjects will require more text-books, and because it will be necessary to buy some illustrative and other apparatus in physical geography and physics, and roughly to fit up parts of rooms for laboratory exercises. This expense will increase but little the necessary appropriation for supplies. It is not necessary to ask for a single additional teacher or for a single increase of salary, as a result of these recommendations.

RECOMMENDATIONS AS TO PROMOTIONS.— In conclusion your committee beg respectfully to offer the following orders, which sum up the results of their deliberations.

The appointment of the special teacher of primary schools has already been authorized by the school committee, and needs no further action.

Ordered, That promotions from grade to grade in the primary schools, and from the primary to the grammar schools, shall be made according to the judgment of the primary teachers, under the direction of the special teacher of primary schools and of the superintendent. Promotions from grade to grade of the grammar schools, and from the grammar to the high schools, shall be made by the teachers, under the direction of the grammar school masters and the superintendent.

Ordered, That no regular pre-announced examinations shall be held in the primary and grammar schools; but the results of such written exercises and written reviews as the teachers and masters may hold from time to time, without previous announcement, may be recorded and used as a part of the basis of promotion.

Ordered, That, in the lowest grades of the grammar and high schools, records shall be kept of the work of pupils thus promoted without examination.

Ordered, That, beginning with the school year, 1892–93, the work of the grammar schools shall be arranged in two parallel programs, one to be accomplished in six years and the other in four years.

Ordered, That pupils may be transferred from one of the parallel courses to the other at the end of any school year, or, if the master sees special reason, at any time during the school year.

RECOMMENDATIONS AS TO TEACHERS. — *Ordered*, That, beginning with the school year 1892–93, a teacher without grade may be appointed in any grammar school having more than ten rooms.

RECOMMENDATIONS AS TO CURRICULUM.— *Ordered*, That the course in arithmetic in the grammar schools henceforth be called "the course in mathematical study."

Ordered, That the course in mathematical study, beginning with September, 1892, shall allow more relative time for mental arithmetic and less relative time for written arithmetic; and that book-keeping be limited to "simple personal and business accounts."

Ordered, That to the course in mathematical study be added: "Geometrical forms and relations, including mensuration, leading up to and including the demonstration of simple theorems in plane geometry in the last year."

Ordered, That any grammar school master may add: "The application of elementary algebra to arithmetical problems."

Ordered, That, in reading, the following requirement be added: "The reading of standard English authors in all grades."

Ordered, That, in language, there be no formal study of grammar in the first third of the course, or of spelling in the last third of the course, but that especial attention be paid to exercises in writing and speaking English. There shall also be language exercises in connection with science and history.

Ordered, That the work in political geography and history shall be combined, with especial attention to historical geography. In the last year the elements of civil government shall be taught in connection with history.

Ordered, That instruction be given in science in the grammar schools, as follows: "Physical geography, including in elementary form the features of the land and ocean and the movements of the atmosphere." Beginning with the school year 1893, "Elementary physics, experiments and laboratory work, with some exact weighing and measuring." Any master, however, who desires, may introduce physics in the year 1892–93.

Ordered, That, from September 7, 1892, all teachers in the Cambridge public schools may be required, unless excused by the superintendent, to attend teachers' meetings or normal instruction for one hour on Saturday morning during term time, or at such other time, not in school hours, as the committee on text-books and courses of study may direct.

Ordered, That such teachers' meetings and normal instruction shall be in charge of the standing committee on text-books which shall be enlarged by the addition of two members, so that there shall be one member from each ward, and which henceforth shall be called the committee on text-books and courses of study.

REVISION OF THE REGULATIONS.— *Ordered*, That all rules or parts of rules of the school committee inconsistent with the above orders be hereby rescinded.

Ordered, That the committee on rules be instructed to report such changes in the rules as may be necessary to carry out the above recommendations.

Respectfully submitted,

ALBERT BUSHNELL HART,
PHEBE M. KENDALL,
GEO. P. JOHNSON,
EDW. B. MALLEY,
WILLIAM TAGGARD PIPER,
FREDERICK W. TAYLOR,
CHARLES F. WYMAN,
Committee.

These orders were passed as printed above, June 2, 1892. It was further "*Ordered*, That a committee of five be appointed to examine and report upon the course of study in the primary schools." A report from this committee is expected in the course of the school year 1892–93.

THE CAMBRIDGE EXPERIMENT.

A paper read before the Department of Superintendence of the National Educational Association, at the Meeting held in Boston, February, 1893, by the Superintendent of Schools, Cambridge.

Under the general subject of "The reconstruction of the grammar school course," I have been requested to give an account of the experiment in Cambridge. The time assigned to this paper compels me to confine myself to a statement of the mere facts.

A year ago the school board appointed a special committee, with Prof. Hart as chairman, "to consider the course of study in the grammar and primary schools, with a view to shortening and enriching the program."

The committee entered on their work in a spirit that commended itself alike to the school committee and the teachers. They made themselves familiar with the existing course of study and what had been accomplished under it. They extended their inquiries to other cities, and also obtained the opinions of prominent educators and persons eminent in special departments of school work. For nearly two months they held weekly meetings to discuss the various questions that came up for consideration.

After this thorough study of the subject, a report was submitted and a series of orders recommended. The following statements will show the changes proposed and adopted:

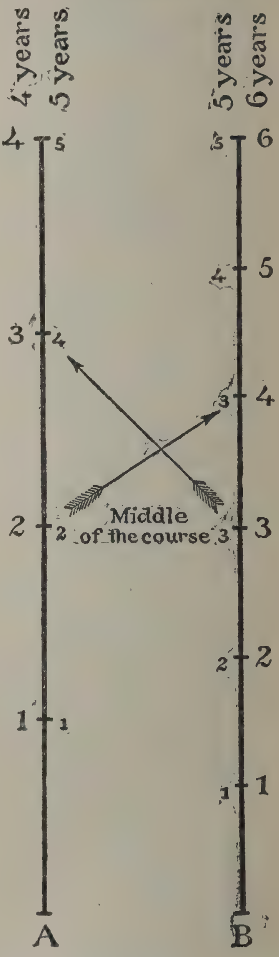
1. Provision is made for the more thorough supervision of the schools by the appointment of a special teacher of primary work; and for the more rapid advancement of pupils in the grammar schools, (1) by authorizing the appointment of a teacher to work in the various classes as directed by the master and superintendent; (2) by adopting a plan by which the work may be done more easily in less than the full time of six years.

The appointment of a teacher to work in the various classes makes it possible to give personal instruction to a larger number of pupils than heretofore. With this instruction many pupils who would otherwise pass regularly from grade to grade can advance more rapidly, and others who would fall behind in their work will be enabled to accomplish it.

The plan by which the work may be done more easily in less than the full time is this: The course of study is divided in two ways: (1) into six sections; (2) into four sections; each section covering a year's work. The diagram will make the plan more clear. Pupils promoted to the grammar schools will begin the first year's work together. After two or three months they will be separated into two divisions, but they will remain in the same room under the same teacher.

One division will advance more rapidly than the other, and during the year will complete one-fourth of the whole course of study. The other division will complete one-sixth of the course. For convenience we will call these divisions A and B. Pupils continuing in division A will complete the course in four years, and those in division B in six years.

During the second year the pupils in division A will be in the room with division B of the third year. At the beginning of the year they will be five months (one-half the school year) behind those in division B. After two or three months division A will be able to recite with division B, and at the end of the year both divisions will have completed one-half the course of study—the one in two years and the other in three years. The plan for the last half of the course is the same as for the first half.



There are also two ways of completing the course in five years: (1) any pupil beginning in division A may at the end of two years be transferred to division B, and then finish the course in three years; (2) any pupil beginning in division B may at the end of three years be transferred to division A, and finish the course in two years. In both cases these changes can be made without omitting or repeating any part of the course.

The former rule of the school committee was as follows: "The grammar schools shall be divided, according to the degree of advancement of the pupils in their studies, each into six grades. But in each grade, except the highest, a separate division may be formed, and special instruction given to such division, in order to enable the pupils composing it to complete the course of study in a shorter period than six years." Last year, under this rule, ten per cent of the graduates did the work in four years, twenty-seven per cent in five years, forty-five per cent in six years, and eighteen per cent in seven years or more, those taking more than seven years being only a fraction of one per cent. It is expected that under the new rule a larger percentage will complete the course in less than six years, and that there will be a corresponding decrease in the number of those who take six years or more.

2. Promotions are no longer made on the results of written examinations. In the primary schools, and from the primary to the grammar schools, they are made by the teachers, under the direction of the special teacher of primary schools and the superintendent. In the grammar schools, and from the grammar to the high schools, they are made by the teachers under the direction of the master and the superintendent.

3. The course in arithmetic is now called the course in mathematical study. The following orders of the committee show the range of work: (1) "The course in mathematical study, beginning with September, 1892, shall allow more relative time for mental arithmetic and less relative time for written arithmetic; and book-keeping shall be limited to simple personal and business accounts." (2) "To the course shall be added geometrical forms and relations, including mensuration, leading up to and including the demonstration of simple theorems in

plane geometry in the last year." (3) "The application of elementary algebra to arithmetical problems may be added by any grammar school master."

Of the former requirements the special committee wrote: "The mathematical studies in the present curriculum include mental and written arithmetic throughout the nine grades, and book-keeping in the ninth grade. It is not apparent to your committee that any branch of arithmetic now taught in the schools ought to be discontinued. The list has already been curtailed of most of those subjects to which exception has been taken. It does not appear that systematic book-keeping has ever been taught in the schools, and your committee recommend that the subject be confined to simple personal and business accounts, introduced toward the end of the course. We are of the opinion, however,— an opinion in which the superintendent and many of the masters coincide,— that much time may be saved in arithmetic by using simple problems and simple processes, and by omitting a part of the reviews which now sometimes occupy the early months of each succeeding year."

4. The reading of standard English authors is now *required* in all the grades. Books of this character have been *authorized*, and have been used in the three upper grades in a part of the schools, and in the highest grade in all the schools, since 1884. The books now to be used are: for the fourth grade, Scudder's "Fables and Folk Stories" and "Hans Andersen's Stories;" for the fifth grade, Defoe's "Robinson Crusoe," and Ruskin's "King of the Golden River;" for the sixth grade, Hawthorne's "Little Daffydowndilly and Biographical Stories," and Longfellow's "The Children's Hour;" for the seventh grade, Hawthorne's "Wonder Book," and Eggleston's "First Book in American History;" for the eighth grade, Burroughs's "Birds and Bees," Hawthorne's "Grandfather's Chair," and Hawthorne's "Tanglewood Tales;" for the ninth grade, "Masterpieces of American Literature." The last-named book includes Evangeline, Snow-Bound, and selections from Irving, which have been a part of the reading in this grade for nine years. Five of these books have been adopted recently. Other books can be obtained at any time under the following

rule adopted by the school committee in 1887: "Standard books of English literature may be used in each grade of the grammar schools, the choice of books to be made by the master of the school, subject to the approval of the school committee." No request under this rule has been refused.

5. In the study of language there has been no material change. The formal study of spelling is to end with the seventh grade instead of the eighth. Special attention is to be paid to exercises in writing and speaking English. Language exercises are to continue through the whole course, in connection with the various subjects.

6. The most radical change has been in the study of geography. In the first year the text-book is to give place to objective and experimental work, based on the elements of physical geography. The work in political geography is to be combined with that in history, with special attention to historical geography; and in the last year the elements of civil government are to be taught in connection with history. Geography, as a separate study, is discontinued in the ninth grade.

7. Beginning with the school year in 1893, elementary physics is to be taught by the experimental, or laboratory method, and is to include exact weighing and measuring by the pupils. Any master is at liberty to introduce the study the present year. This has been done in one of the schools. The master gives weekly two lessons of thirty minutes each to the pupils of the ninth grade. The work is laid out by the teacher of physics in the English high school. Additional time is given in connection with the language work. It is expected that a part of the apparatus needed for the teaching of physics will be made at the manual training school, and the expense is not to exceed the cost of materials. For this favor the city is indebted to the superintendent of the school, Mr. Harry Ellis.

I have now indicated the changes in the plan of classification and promotions, and in the course of study. It remains for me to speak of this work as it goes on in the schools. Harvard University offered to furnish instruction to the grammar school teachers, in geography, geometry, and physics. The generous offer was accepted as an expression of the interest of the University in the experiment. Professor Davis is the instructor in geography, Professor Hanus in geometry, and Professor Hall in physics. The teachers of the three lower grades attend the lectures on geography; those of the three higher, on geometry; and a class of twenty-two (each school being represented), on physics. These lectures are given weekly during the current school year, vacations excepted. I need not say they have proved interesting and profitable. No teacher can listen to them and not be stimulated and assisted in his efforts for higher attainment, not only in the special study discussed in the lectures, but in every branch of his school work. Outlines of the courses in geography and geometry have been prepared, and the teachers are working along the lines indicated. These outlines are in print,— the one in geometry by Prof. Hanus will soon be issued as a manual.

The new work has not yet been taken up in its completeness. In geography it is limited to the lower grades. Geometry is to be taught in the seventh, eighth, and ninth grades, but it was thought best to introduce it this year into the ninth grade only, in order that the teachers might have the benefit of the instruction given by Prof. Hanus, and that the subject matter might be wisely selected. There is no magic in the word *geometry*. Its educational value in the grammar schools will depend on the kind of work undertaken, and the methods of instruction. The time given to geography is two hours a week, the same as before; and to geometry, one hour and a half. This time is secured, not by crowding out any subject, but by teaching all subjects so as to make them mutually helpful.

It is too soon to speak of results. The pupils have just been classified for the first time on the plan by which a part of them are to do one-fourth of the whole work each year, and the remaining part one-sixth. The new studies were introduced only last September. In several of the schools the work in geometry was not taken up during the first two or three months, the teachers intending to give special attention to it later in the year; and it will be remembered that physics as a required study is not yet introduced. It may be said, however, that the circumstances under which the experiment is being tried are favorable to success.

THE MISSION OF HISTORY.

BY MISS CAROLINE CLOSE, TEACHER IN THE ENGLISH HIGH SCHOOL.

As a powerful aid in the development of the mental and the moral nature, history rightly takes an honored place in our course of study. It is within its power to call into active service not memory only, but every faculty of the mind; and, by its vivid illustrations of the great truths of the moral and the spiritual world, it can scarcely fail to make conscience more intelligent and to show the will its possibilities for good or for evil.

If the study of history is to be a delight, imagination must be aroused. The importance of awakening this mighty attribute cannot be over-estimated; for, by its almost magic power, the curtain which hides the past from view is removed, and scenes of surpassing interest are revealed, the living dramas of by-gone days hold our attention and touch our sympathies.

Among the many methods for reaching the imagination, map reading may be mentioned as one that has proved effective. For example:— After placing before the pupils a map of Great Britain, give each an opportunity to answer the question, "What do you see?" One sees England's great cities with their network of railroad connection; another notices the time-honored castles with their aristocratic inhabitants; an embryo poetess speaks of the beautifully cultivated fields with their blossoming hedges, so dear to the natives of this "wave-kissed isle;" another, whose ancestors hailed from the land of Burns, sees the heath-covered hills of bonny Scotland. Aided by the teacher, the class soon makes a vivid word-picture of this island kingdom as it is in this nineteenth century.

Ask the pupils to look at the map while the picture just made slowly fades from view, as history carries them backward two thousand years to that period of time known as the "Age of

Bronze." The pupils are now ready to read a map of the land as it was in the days when the picturesque Briton roamed at will through its almost pathless forests. First let them speak of what the suggestive lines and words of the map make them see, then let them complete the view by telling facts concerning this island world as it was before the powerful Roman made it his own. Class work leads to individual work, and the maps in the text-book may be used by the pupils as subjects for short compositions. The following is quoted from one of these:—

"It was a dreamy day in early summer, and I sat by the open window with my 'English History' in my hand. As I listlessly turned the leaves of the book, a map caught my attention. It represented Great Britain at the time of the invasion of the German tribes. Running from Jutland to Britain, was a dotted line marked 'Saxons.' A dotted line, that was all!—but in my imagination the dots enlarged into dragon-headed ships. I could see the rough seamen with their light hair and blue eyes. Never before had they seemed so real. I could almost hear them talk in their strange tongue. Their leaders, fierce-faced and tall, seemed to be alive once more, and the daring of their faces half-frightened me. Is it to be wondered at that the Britons could not conquer these tribes?"

In order to keep the imagination busy during the preparation of a lesson, let the pupils make a list of thrilling scenes or subjects suitable for paintings. The same object is accomplished by the writing of supposed diaries, by the arranging of possible tableaux, by making pen sketches, and by taking written photographs. This sort of work leads the pupils to search eagerly in pictorial histories or in historical novels for facts in regard to dress, personal appearance, scenery, etc. Into these facts imagination "breathes the breath of life." The following is a part of "An Imaginary Photograph of a Cavalier":—

"Plumes and gay garments! These are, I think, the most prominent features of the picture. The face, though pleasant and agreeable, is suggestive of a feeling of superiority. It is a handsome face, too; but there are marks of dissipation upon it. Nothing in the face indicates earnestness, neither does Mr. Cavalier look as though he were a religious man — no, every feature of the picture indicates a gay, reckless nature, and evidences of earnestness of purpose are sadly lacking."

History does not lend itself so readily as science to the work of making careful observers; and yet a skilful use of pictures will do much in this direction. It is evident that a large collection of pictures is desirable. Memory grasps an event expressed by a picture more quickly and more surely than it does an event expressed by language. Encourage a pupil to adorn his blank-book with appropriate pictures.

Reason must not lie dormant if history is to fulfil its possibilities. Every century has had its problems to solve, and many a grievous blunder has been made through ignorance of underlying principles. Our boys and girls may be induced to search for these in order to discuss such questions as :—

a. If you had lived in England at the time of her great Civil War, on which side would you have fought, the parliament's or the king's?

b. Why was the Commonwealth a failure?

c. To whom does the credit of the great reforms of the nineteenth century belong?

d. If you were a member of parliament, would you vote for or against the last "home rule" bill?

The deciding of these and kindred questions will do much towards preparing our young Americans to be intelligent citizens of this great republic.

Class debates are apt to make pupils firm believers in the argumentative power of facts, and books are soon at a premium. Not long ago, a youth who was chatting with me about a teacher whom we both admire made a remark which impressed me as a superlative compliment to her power. In a most emphatic manner he said: "I tell you she makes a fellow work the library." *It is a part of the mission of history to make our boys and girls "work the library."* Let each pupil's blank-book contain a list of poems, novels, and histories, to aid him in selecting suitable historical reading. "The Reader's Guide," published by Ginn & Company, will aid in making this list.

This line of work is done but poorly if one stops at telling what to read. Is not the how to read even more important? A pupil must distinguish between the kernel of the nut and the shell. He must learn not to abuse his memory by burdening it with facts which are better carried by an encyclopædia. He may be aided in this difficult task by the preparation of a blank-book planned by the teacher for this purpose.

A list of important dates may be made as follows :— Ask the pupils to notice, when preparing the lesson, any date that seems worthy to be memorized. Let its importance be decided by the class ; the date is rejected if a better way for timing the event is given, or if it cannot be used as the time-centre of many events.

Guided by the teacher, a class may make a set of topics that will suggest what is desirable to know in regard to every reign. The following were recently used by a class in English history :—

I. Time of the Reign (not the dates).
II. Claim of the Ruler to the Throne (if important).
III. Principal Events.
IV. Prominent People.
V. Characteristics of the Ruler.
VI. Progress of the Nation.

The pupils were asked to find by reading and to write what was important under topics three and four. These outlines were usually read in the class, and many tests were applied to both events and persons before they were accepted as truly important. After this, the outlines were copied into blank-books and memorized.

The following served as a guide in the study of each war :—

I. Time.
II. Cause or Causes.
III. The Parties Concerned and their Leaders.
IV. Principal Events.
V. Results.

The desirability of having the same topics for subjects of a like character is apparent ; the familiarity of the guide gives encouragement to a young mind in its travels through the world of books.

Whittier has been lovingly called our "preacher poet ;" may we not with equal appropriateness *welcome history as our preacher study* ? What sermons can excel in force those written in the growth of a great nation, and in the life-stories of those who have been prominent in promoting or retarding that growth ?

Give the pupils an opportunity to discuss the moral characteristics of a nation's leaders. English history furnishes many suggestive character sketches. Among those that never fail to excite interest, are William the Conqueror, Mary Queen of Scots, Elizabeth, Oliver Cromwell. During these talks, many gems of ethical truth may be revealed. It is a good thing for a boy to discover that the results of the life of a weak-willed man may be as disastrous as those of the life of a tyrant; that persecution strengthens a mans' opinions; that a man's greatest victories are not those won on the battle-field.

The pupils may be asked to find in history illustrations of the thought contained in a given quotation. The search may lead to careful thinking along moral lines. The following are suitable for this sort of work :—

> "Whose glory was, redressing human wrong."
>
> "How many among us at this very hour
> Do forge a lifelong trouble for ourselves,
> By taking true for false, or false for true!"
>
> "Yea, let all good things await
> Him who cares not to be great,
> But as he saves or serves the state."
>
> "But noble souls, through dust and heat,
> Rise from disaster and defeat the stronger."
>
> "Such earnest natures are the fiery pith,
> The compact nucleus, round which systems grow."
>
> "His face with lines of firmness wrought,
> He wears the look of a man unbought."

History comes into our schools as a power for good. It should be the aim of every teacher to devise methods that shall make it possible for this study to fulfil its noble mission.

THE ENGLISH HIGH SCHOOL BUILDING.

[Written by the Head Master of the School.]

The new English high school building was occupied by the school February 12, 1892. Although not completed at that time the edifice was sufficiently advanced for convenient use. It was originally designed to accommodate a number of pupils not exceeding four hundred and fifty. Before the foundations of the new structure were laid the number of pupils had gone beyond four hundred and fifty. At the time of occupancy the registration of pupils had reached six hundred and twenty-five.

The land for the building was the generous gift of Mr. Frederick H. Rindge.

The amounts appropriated for erecting and furnishing the building and for putting the grounds in order have reached an aggregate of $230,000. The plans for the grounds were prepared by the city engineer. The walks are constructed of a light blue artificial stone bordered by sides of crushed granite. By this combination of a central stone walk that is about four feet wide with sides of crushed stone that increase the width to eight feet, broad walks have been obtained at a reasonable cost. The æsthetic sense is better satisfied than it would be by red brick or black asphalt. These walks are so arranged as to accommodate pupils coming from the various sections of the city and at the same time to discourage unsightly footpaths across the lawns. A retaining wall of gentle height separates the playground in the rear from the higher grade of the school lot. Along this wall a strong iron rail has been constructed, and just inside the rail on the higher grade is a walk, which serves not only its own purpose but as a kind of grand stand from which spectators may observe such games as may be in progress on the playground.

It is confidently hoped that the grounds of the public library, the manual training school, and the English high school will be fully transformed, as they now are in part, to a well-appointed and beautiful park. To keep these grounds in order, to have each portion of them harmonize in treatment with every other, and to insure a steady growth in the pleasing effect of the whole, it is desirable that they all should be under one control and treated as a unit. A request is now pending that the care exercised by the street department, through the city forester, over the grounds of the public library may be extended to all the land of the Rindge gifts. When the work of grading and macadamizing the five streets about this park and of providing them with good sidewalks and convenient street crossings is completed, then the duty of making good, at least in their outward aspects, a series of magnificent gifts to the city will have been performed.

A few words about the building may not be amiss, notwithstanding what has been said about it in previous reports. It stands one hundred feet back from Broadway, and about fifty feet from Ellery street at one end and Trowbridge street at the other. In the rear the playground extends back some three hundred feet. The building, therefore, stands aloof from all houses, and for quiet, air, and sunshine is admirably placed. The foundations are of granite, the first story of a light freestone from Ohio, and the rest of Perth Amboy brick of a light red color. The architecture is purposely simple, the aim having been to secure solidity and majesty of effect. The ornamentation is confined to the central part of the façade, where the main building shows beautiful sculptured work at the entrance, great windows with arched tops, and an elaborate cornice. The wings are plain. The corridors of the first and second floors extend across the building, the lower paved with marble tiling, the upper floored with hard pine. The staircases are of iron; the treads and landings are filled wlth asphalt. The finish in the corridors and assembly hall is of ash, elsewhere of cypress. The floors are of hard pine, except the two entries at the entrance to the hall, which are of oak. The construction of the floors is what is termed mill construction, that is, the beams or trusses show in the rooms below. The flooring is laid directly upon them. First comes two-inch planking; then an inch or more of mortar, in which are laid all the piping and wires; then paper, and finally hard pine blind-nailed to strips or cleats that divide the mortar and rest on the planking. There are consequently no floor spaces for mice to wander in or for fire to run through.

The building is piped for gas and wired for incandescent lamps. Combination fixtures are used in the hall, the corridors, and in places where it is deemed necessary to provide either for the failure of the incandescent lamps or for gas for experimental purposes. Elsewhere the system of incandescent lamps is exclusively used.

The system of heating is by indirect radiation, the air being admitted over radiators heated by steam, and then rising to the several rooms. On the first floor the warm air is received through registers in the floor; on the other floors, through registers seven or eight feet above the floors. The supply of pure air is not intended to be shut off while the school is in session. By means of mixing valves it may be taken in hot, warm, or cold. The flues for ventilation are supplied with steam pipes. These flues connect with great ventilating shafts that are heated by steam. The system has worked well so far as tried. It certainly answers for cold weather.

When the weather is warm special provision needs to be made for heating the flues and the ventilating shafts without heating any part of the rest of the building. The committee that originally considered the plan of ventilation placed special stress on the importance of this feature.

The supply of light is ample, every room having the sun at some time during the day and most of the rooms never being without it during the session. The quantity of light is regulated by shades, which may be used to uncover either the main windows or the transom windows. The latter windows are very convenient in mild weather for letting in the air from out of doors without unduly exposing the pupils to drafts. The northwest and northeast sides are provided with permanent double windows, so arranged, however, as to be freely opened when occasion requires. These windows are especially convenient for regulating the admission of air from the outside when it is desirable to do so.

The rooms of teachers, the reception room, the library, the text-book rooms, the offices of the head master and the secretary, are placed as the plans indicate, in the rear of the corridors and in the contracted part of the building, where there is good light indeed, but where the sunshine is not so imperatively needed. These conveniences are numerous and ample. Among them are two so-called hospital rooms, that is, sick rooms for use in the emergencies that not unfrequently occur in a large school. The office of the head master, the library, and the office of the secretary make a commodious and attractive suite of rooms, all of which are devoted to library purposes. The shelves are easily accessible, for closed cases have been abandoned and pains taken to make the use of the books inviting and easy. It is better to let books get mixed a little or even to run the risk of an occasional loss than so to guard them that it becomes hard, if not disagreeable, to get at them. Pupils find it pleasant to work in the library. The main room of this suite is spacious enough for recitation purposes, and can be used for advanced history or literature classes.

Great pains have been taken to make the laboratories simple, economical, and at the same time serviceable. It is believed that the arrangements for science work are as ample and complete as any in the best-equipped high schools of the country. The following rooms have been provided:

1. A physical laboratory, with a demonstration table for the teacher, chairs with writing-arm attachments for a class when seated, tables with supports for apparatus and lockers for storage, side tables with gas and water, and minor helps.

2. A smaller connecting room with shelves and cases for such physical apparatus as the pupils personally use, and a working table for the teacher and for advanced or special students.

3. A chemical laboratory with one hundred and twenty-eight lockers, so that each pupil may have his own equipment and be held responsible for its care. The room contains a chemical hood where a dozen pupils may work at once with noxious gases, also shelves for the storage of such supplies as are in daily or frequent use.

4. A smaller connecting room with shelves and cases for supplies, books, balances, and the varied materials used in chemical study. This room contains a table supplied with gas and water and intended for the use of the teacher or of special students under the teacher's immediate guidance.

5. A small dark room, with sink, shelves, gas, and electric lamps for photographic purposes.

6. A large lecture room with a raised floor, and chairs for from one hundred to one hundred and fifty pupils, each chair having a shelf to facilitate the taking of notes. Here the teacher of physics or chemistry, or, in fact, of any subject, may assemble pupils in larger numbers than usual for talks, lectures, and such experiments as are better performed for the pupils than by them. This room contains closets for storage, cases for lecture table apparatus, a well-appointed demonstration table, a stereopticon screen, and a porte-lumière. Its windows may be darkened at short notice. This room, as well as the five rooms just described, is provided with hot water and cold.

The science plan contemplates three sorts of instruction: (1) that which comes from individual work in measurements, experiments, and laboratory work in general; (2) that given directly by the teacher by means of lectures, explanations, and such experiments as are better performed by him than by the pupils; and (3) that which comes from the study of books and from the usual methods of question and answer.

In physics, the policy of the instruction inclines to giving the pupils table work that requires close, accurate, and somewhat limited observation, and admits of exact records that may be tested by an examiner, the teacher reserving for his own presentation and explanation such experiments as are general, many-sided, and susceptible of misinterpretation by the young and untrained. In other words, the pupil's work is largely quantitative, the teacher's largely qualitative.

The laboratories for physics have been designed, and it is intended to equip them, in the spirit of the principles just stated. Considerable apparatus has already been ordered for the two departments of heat and electricity, chiefly for individual work. The chemical equipment has also been increased.

In addition to the six rooms already described there is a botanical room, with drawers for the school herbarium, cases for botanical specimens, window shelves for plants and water; also a mineralogical room and a spacious drawing room, the latter to receive the tables, models, screens, and other equipment of the evening drawing school.

The wardrobes are in close connection with the schoolrooms. All communication with them during school hours, when they are locked, is by way of the class rooms, and therefore under the eye and control of the teachers.

The assembly hall seats six hundred persons. The platform may seat one hundred in addition. It was decided before any plans were made, in view of the courtesy of Harvard University in placing Sanders Theatre at the disposal of the city for the graduation exercises of the school, to construct a hall more for school use than for public use. The hall is used for singing, for opening exercises at such intervals as are deemed best, for lectures, and for any general school purpose. It can be darkened for stereopticon exhibitions.

The basement is well above ground, light, well-ventilated, and properly warmed. It extends unbroken, save by arches and supporting pillars, from one end of the building to the other.

The floor is of cement. Portions of this floor will need further attention in the near future because of imperfections in the construction. A properly made floor of asphalt would have been better, for in addition to equal or greater solidity and firmness it has the advantage of being free from dust.

A lunch counter has been established in the central part, between the boys' end of the basement and that of the girls. It is conducted by the janitor and his wife. The fare is simple, — milk, cocoa, sandwiches, apples, oranges, bananas, etc. The counter has proved a popular innovation, and, notwithstanding the low prices, has been self-sustaining.

The boiler room is separate from the main basement. The coal bin is outside of the building, on a level with the depressed floor of the boiler room, and accessible from it. Dust from the coal and ashes is thus kept out of the basement and the stories above.

A convenient room has been fitted up in the basement for the janitor and the engineer. Adjoining this is a tool room, where repairs may be made and certain supplies kept.

The bells are rung automatically by electricty. A program clock, which may be set for any disposition of times whose intervals are five minutes or multiples of five, does the work.

At any time the clock may be instantly switched off, and a special program may be rung by hand.

Speaking tubes connect all parts of the building with the office of the head master.

There are five hundred and ninety-two desks in position. This number can be increased by one hundred without seriously trespassing on the proper use of the building. The wings are planned for extension, each extension to contain three rooms. In this way, at a comparatively small cost, the capacity of the school may be enlarged by three hundred desks.

Mr. Rindge has just completed a building near the present manual training school structure which he designs for the accommodation of those boys of the English high school who take the manual training course of study. It is important that these boys should do their academic work in the schoolrooms as near the shops as practicable. For three years past they have had desks in rooms of the training school building that were never designed for academic work. These rooms are now needed for the purposes for which they were originally planned. The new annex contains three schoolrooms, a physical laboratory, an apparatus room, a drill and assembly hall, teachers' rooms, and other accommodations. The furniture is provided by the city. Practically, Mr. Rindge's generosity has extended the life of the new English high school building by many years, for if the boys of the training school were not thus provided for, they, with the rest of the English high school, would tax the high school building to its utmost capacity.

In conclusion, it may be said that the English high school building has been planned with great care, and is, without doubt, one of the most satisfactory buildings for school purposes in New England. It was dedicated April 4, 1892.

"*Work is one of our greatest blessings: — Every one should have an honest occupation.*"

THE CAMBRIDGE MANUAL TRAINING SCHOOL FOR BOYS.

Founder of the School, Fred'k H. Rindge.

Supervising Committee.

William E. Russell,
Samuel L. Montague,
Edwin B. Hale,
T. Wentworth Higginson,
Andrew McF. Davis,
Robert Cowen,
Harry Ellis.

Harry Ellis, *Superintendent.*
Frederic W. Taylor, M.D., *Medical Director.*
Allan K. Sweet, *Instructor in Machine Shop Practice.*
Albert L. Ware, *Instructor in Mechanical Drawing.*
James G. Telfer, *Instructor in Blacksmithing.*
George E. Furbish, *Instructor in Turning and Pattern Making.*
Walter M. Smith, *Assistant in Machine Shop Practice.*
Wallace B. Blandin, *Instructor in Carpentry and Joinery.*
Frederick B. Scotton, *Assistant in Drawing.*
Sidney I. B. Stodder, *Engineer.*
Robert C. Harlow, *Clerk.*

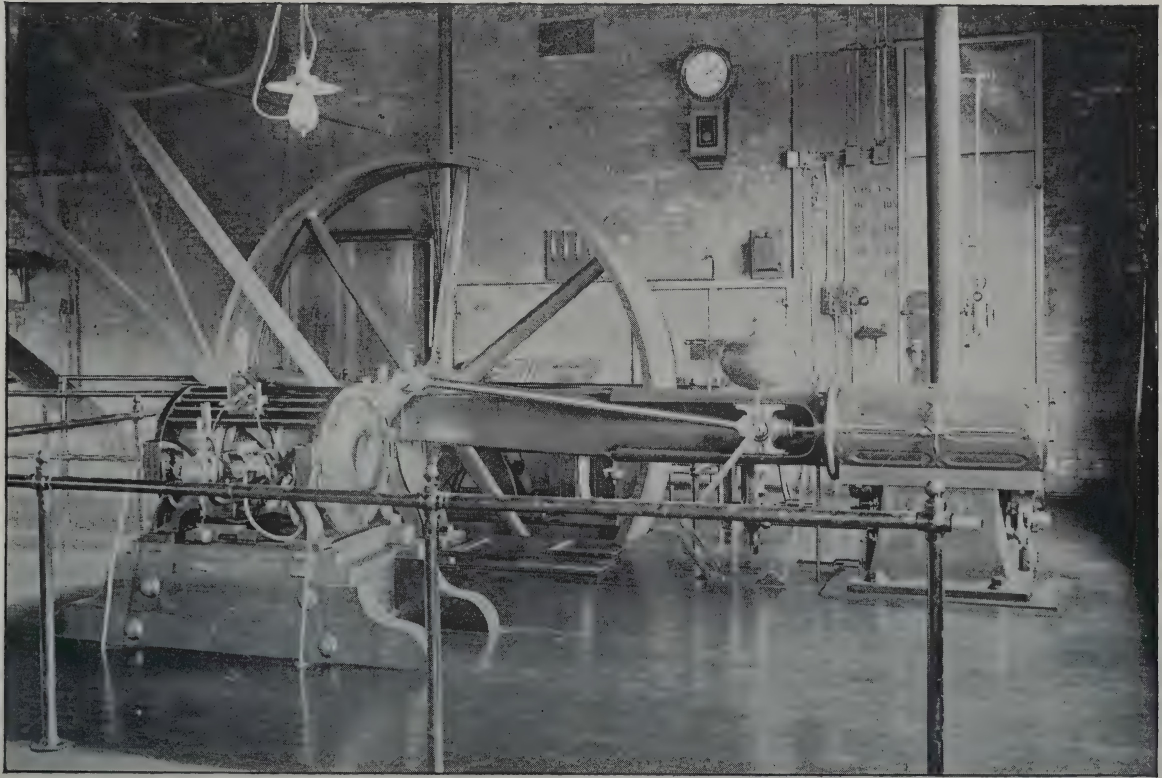


Fig. 1. Engine and Dynamo.

THE CAMBRIDGE MANUAL TRAINING SCHOOL.

BY C. W. PARMENTER, CAMBRIDGE LATIN SCHOOL.

Thoughtful men no longer question the educational value of manual training, but the problem of properly correlating this new educational force with existing institutions, and obtaining a maximum of advantage at a minimum cost is still unsolved. Interest in the Cambridge manual training school is by no means confined to the community that is most directly benefited by it, for a variety of favorable circumstances makes it peculiarly adapted to work out results of great importance and far reaching influence. It was established and is maintained by a philanthropic citizen, who, in addition to the manual training school, which has been erected and equipped at a cost of $75,000, has given to his native city a public library building, completed in 1889, at a cost of $100,000; a city hall, first occupied in December, 1890, which cost $200,000; and the large tract of land which serves as the site for the public library, the manual training school, and the English high school opened in February, 1892, upon which last institution the city has expended $226,000. This beautiful lot, containing 260,000 sq. ft., is situated at almost the geographical centre of the city and is valued at $70,000. As the streets on either side are unusually quiet, this splendid group of educational institutions enjoys a freedom from noise seldom possible in a large city.

The manual training school was erected and equipped, under most favorable circumstances, by a committee of gentlemen admirably fitted by education, experience, and natural gifts, to undertake the work; and it embodies the results of a careful

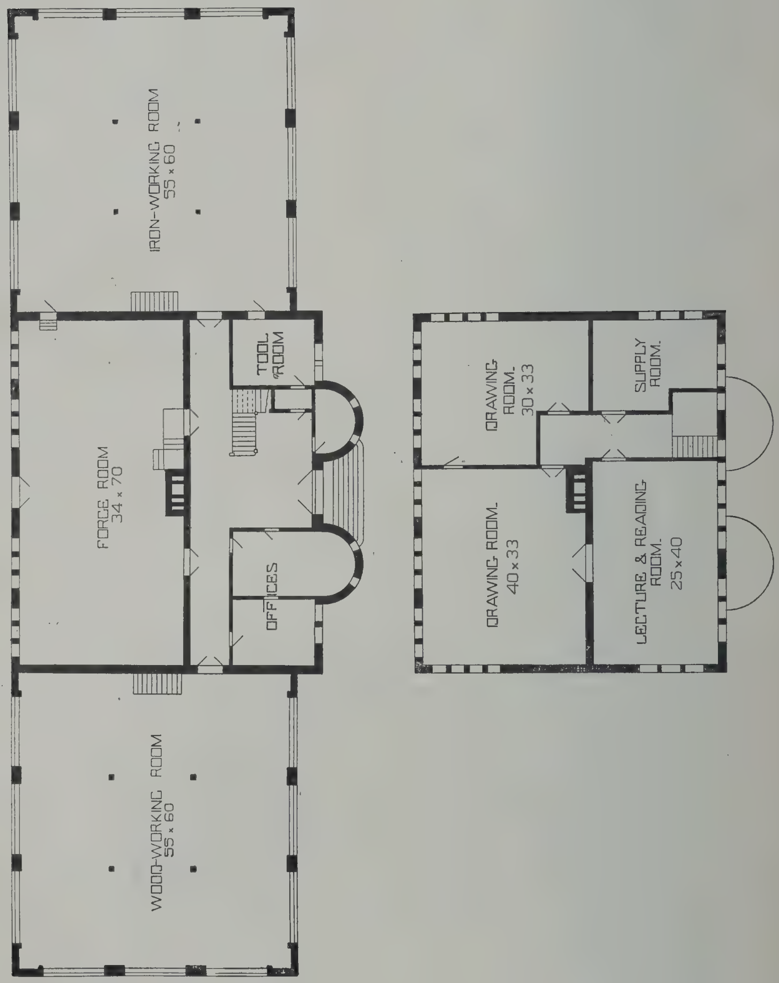


Fig. 2. Floor Plans of Cambridge Manual Training School.

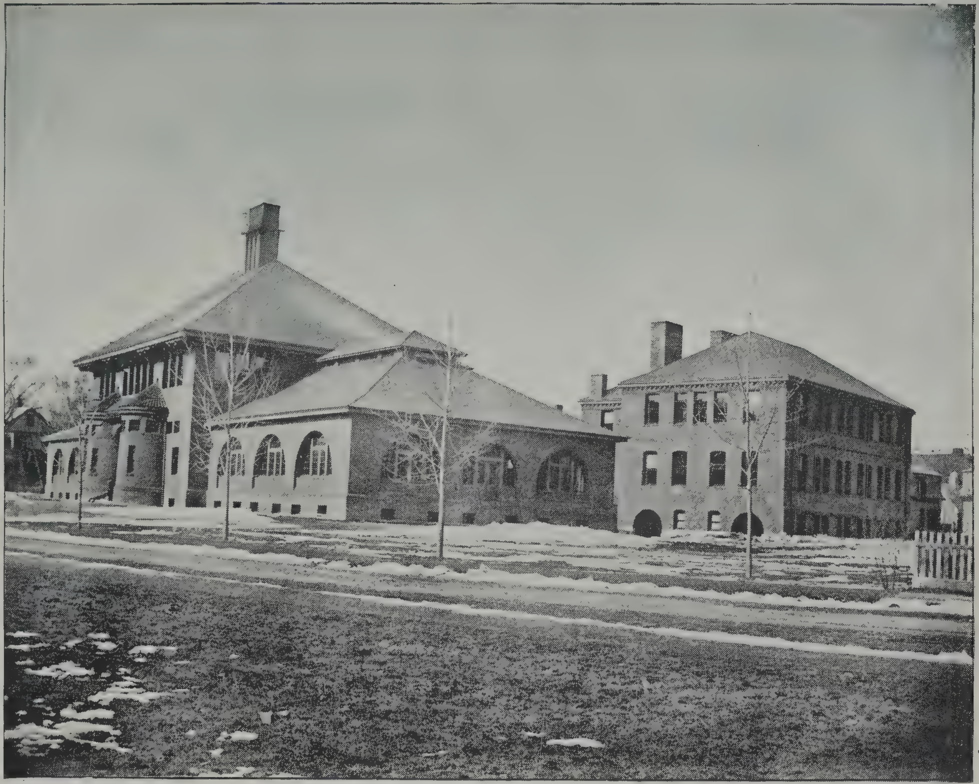


Fig. 3. Cambridge Manual Training School.

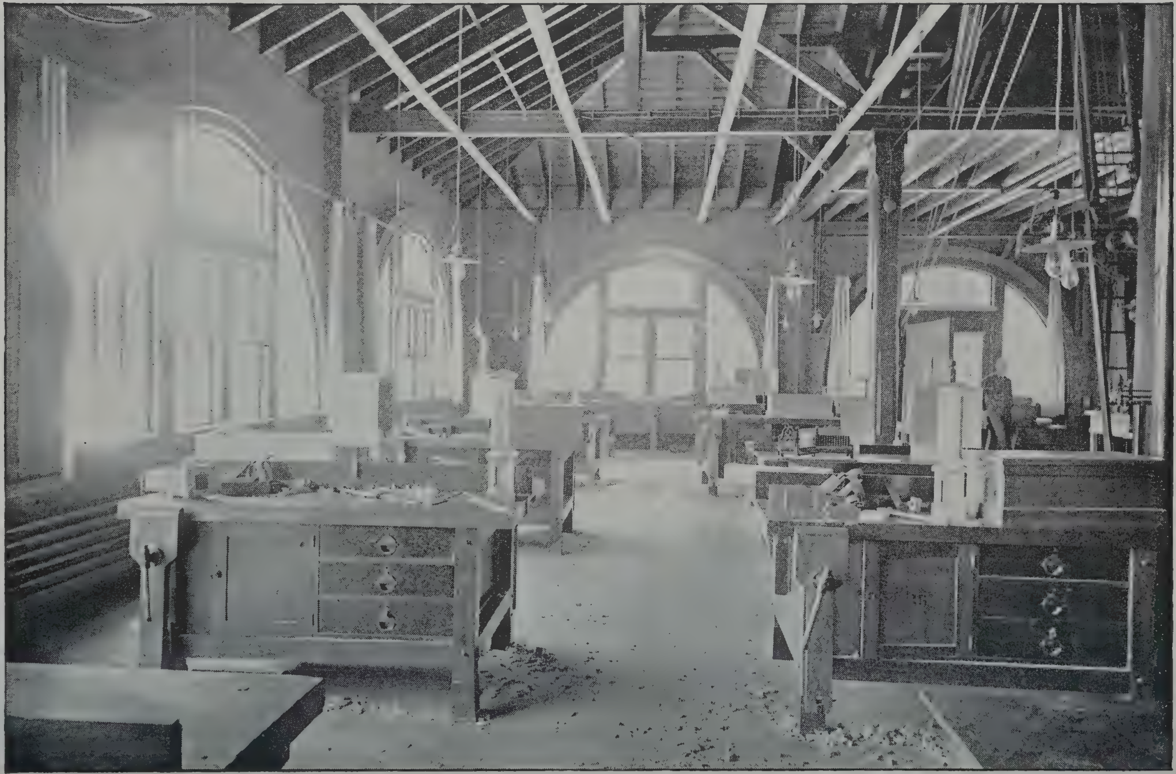


Fig. 4. Carpentry and Joinery.

study of all available information concerning similar institutions in this country and abroad, supplemented by personal inspection of several of the best known schools of its kind. It is believed that a detailed account of its construction, equipment, aims, and methods will be of general interest to the citizens of Cambridge, and of special service to all who are giving attention to the establishment of courses for manual training in connection with any system of schools.

The main impression which the building itself is calculated to make upon the mind of the observer is its evident adaptability to the purpose for which it was constructed. It consists of two stories with wings of equal proportions. The accompanying plans (Fig. 2) show the size and relative position of the different rooms.

The Wood-Working Room.

In this room there are two departments, the east side (Fig. 4) being fitted for general carpentry, and the west side for turning and pattern-making. On the east side, conveniently arranged, are 8 wood-worker's benches, 34 in. high, with a top 66 in. by 43 in. A vertical board, 5 in. high, divides the top of each bench into two equal parts, thus making it possible for two pupils to work at the same bench, one on each side, without danger of interference. Below the top of the table, at the right of the worker, are three drawers 23 in. by 5½ in., with a depth of 26 in., each fitted with a lock. Each pupil has one of these drawers in which to keep the individual tools supplied to him, and his unfinished work. The remaining space, below the top of the table, is converted into a closet designed to hold most of the implements used in common by the members of different divisions. These implements are:

A bit brace; a try square, 6 in. blade; a hammer; a bevel, 6 in. blade; a plain boxwood rule, 2 ft. long; 6 in. dividers; a boxwood scratch gauge, 6 in. long; a screw-driver; chisels ¼ in., ⅜ in., and ½ in.; a knife; a back saw, 10 in.; blade; a cutting-off saw, 22 in blade, 8 teeth to one inch; a splitting saw, 22 in. 10 teeth to one inch; two winding sticks, 18 in. by ¾ in. by ½ in.; a block-plane; a bench hook; and a dust brush.

The individual tools in the drawers are: a block-plane iron; a jack-plane, 16 in; a short jointer, 22 in.; a smooth plane, 8 in.; and chisels, 1¼ in. and ¾ in.

The saws are kept in a special case provided for them in the front end of the room. They are numbered to correspond with the benches, and each pupil is charged with those which he receives and is held responsible for their return, in good condition, to their proper place, at the end of each working period. Between two of the windows is a case for storing the "blue prints" from which the pupils work. This case is 4 ft. 6 in. high, 2 ft. wide, and 12 in. deep, and is conveniently divided into pigeon holes for fifteen sets of "blue prints." Near the benches are several stationary glue-pots heated by steam and always ready for use. Conveniently located for preparing materials for the work of pupils is a double arbor bench saw, capable of being quickly adjusted for either cross-cutting or splitting, and furnished with the most approved devices for facilitating work.

Running the entire length of the west side (Fig. 5) of the room, in front of the windows, is a bench supplied with pattern-maker's tools, and adapted to be used by divisions of twelve pupils. Attached to this bench, separated by convenient distances, are twelve Fitchburg quick action vises, with 9 in. jaws, and near each vise is a set of three drawers, one of which is assigned to each pupil for his individual tools and unfinished work. By the side of the drawers, in each section, is a locker designed to contain the following tools, used in common by members of different divisions:

A bit brace; a try square, 6 in. blade; a hammer; a bevel, 6 in. blade; a plain boxwood rule, 2 ft. long; 6 in. dividers; a boxwood scratch gauge, 6 in. long; a screw-driver; chisels, ¼ in., ⅜ in. and ½ in.; a knife; a back saw, 10 in. blade; a cutting-off saw, 22 in. blade, 8 teeth to one inch; a splitting saw, 22 in. 10 teeth to one inch; Stanley's knuckle-joint block-plane, 6 in.; Stanley's iron jack plane, 14 in.; contraction rule, 24 in.; inside-bevel pattern-maker's gouges, ⅝ in., ¾ in., and 1¼ in., and 1½ in.; two winding sticks, 18 in. by ¾ in. by ½ in.; a dust brush; and a bench hook.

The individual tools in the drawers are: plane irons for each plane; paring chisels, ¾ in. and 1¼ in.; turning chisels, ½ in. and 1¼ in.; and a gouge, 1¼ in.

In front of this bench, at a convenient distance from it, is a row of twelve pattern-maker's lathes, each having a 6 ft. bed, and capable of doing work 12 in. in diameter. Two lathes are placed side by side, two feet apart, their bed pieces being con-

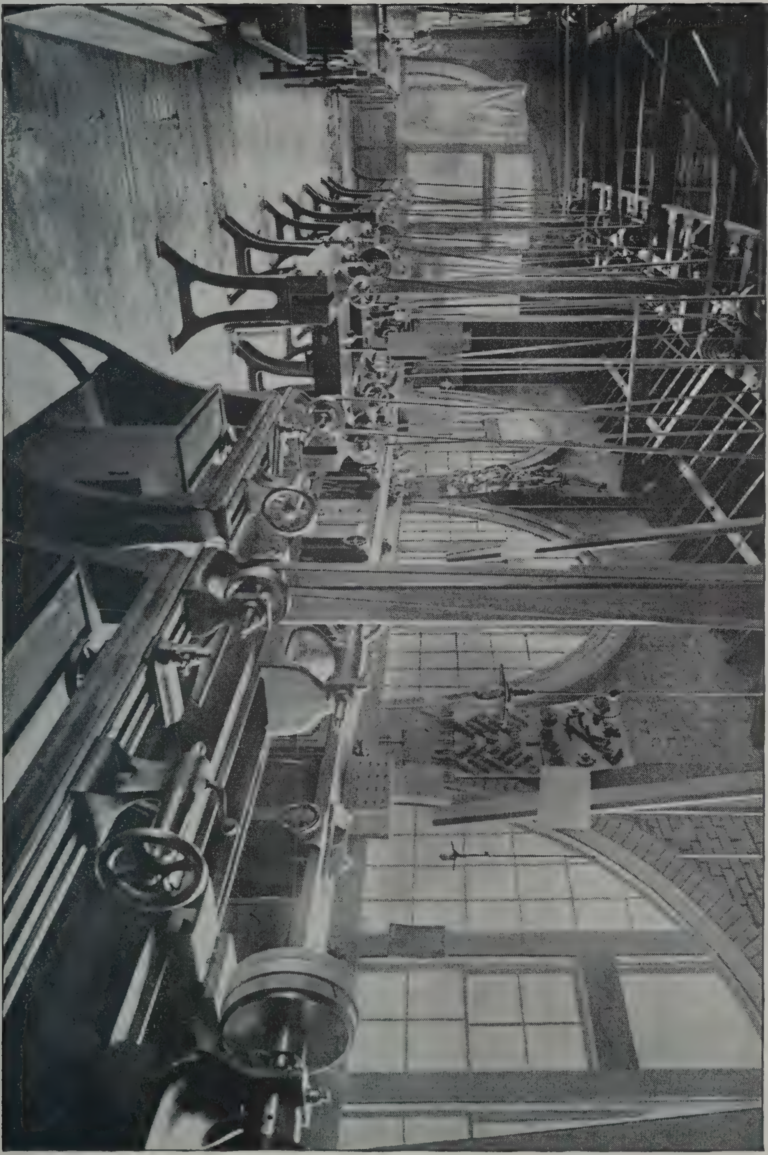


Fig. 5. Pattern-Making.

nected by a case carrying two drawers, each fitted with a lock, and designed to hold the following tools used in wood turning:

Inside calipers, 6 in.; outside calipers, 6 in.; gouges, 1¼ in. and ½ in.; chisels, ¼ in., ½ in., and 1¼ in.; a cutting-off tool; a round nose tool; a diamond-point tool; dividers, 6 in.; an oil stone and an oiler.

At one end of this row of lathes is a large pattern-maker's lathe, having an 8 ft. bed and being capable of doing work 20 inches in diameter. This lathe is fitted with the most approved devices for doing all kinds of work, and is designed to be used only by the instructor and by pupils who develop special skill and demonstrate their ability to do a high order of work. By its side are two iron speed lathes, 9 in. swing, 42 in. bed, constructed in the machine shop by the members of the class of '91. Near at hand are a band saw, 26 in. wheel, fitted with an adjustable iron table, and a scroll saw, both of the most approved pattern. A tool-closet, located in the centre of this room, is supplied with a great variety of tools adapted to every possible need of a wood-working establishment. The lumber-loft is easily reached by a flight of stairs leading to the top of this closet.

The Iron-Working Room.

This room, like the wood-working room, is fitted for two distinct kinds of work. The appliances upon the west side (Fig. 6) are adapted to general iron fitting,—chipping, filing, drilling, scraping, etc.; while those on the east side are for use in machine-shop work. Upon the west side are located four benches 3 ft. high, and having a top 9 ft. by 3 ft. 8 in. A vertical wire screen, 24 in. high, divides the top of each table in the centre and serves to protect pupils on opposite sides from the chips which fly from each other's work. Each side of these benches is furnished with two vises and two sets of four drawers, the upper drawer of each set being used in common by the pupils of different divisions. One of the three other drawers is assigned to each pupil for his individual tools and work. At the beginning of a lesson each pupil obtains from the tool-room a tray which fits the upper drawer of each set, and which contains the following tools, with the exception of the hammer, which remains in the drawer:

A hardened steel try-square, 3 in. blade; outside spring calipers, 4 in.; spring dividers, 3 in.; 4 in. steel scale, graduated to $\frac{1}{64}$ in. scratch awl; prick punch; centre punch; centre chisel; file card; brass vise-jaws; ball peen hammar, 1¼ lb.; box of oiled waste to be used in chipping; and a box of chalk.

The individual tools in each pupil's drawer are: A cope chisel; a flat chisel; a hand bastard file, 8 in.; a half-round bastard file, 10 in.; half-round second cut file, 8 in.

In addition to the benches described above, there is a side bench furnished with a large number of tools needed for special work. Four small speed lathes are also used in this department for drilling, hand-turning, and polishing.

On the opposite side of the room (Fig. 7) are the equipments of the machine-shop department, consisting of engine lathes, four 16 in., one 15 in., seven 14 in., and one 11 in.; one Brainard, No. 3, milling machine, with attachments; one cutter-grinder; a 24 in. planer; a 15 in. shaper; a 24 in. upright drill; a sensitive drill; a 36 in. grindstone, and an emery grinder. The entire side of the room is occupied by a long bench like that found in the pattern-making department, fitted with twelve machinist's vises and as many sets of drawers. In the upper drawer of each tier are:

A ball peen hammer, 1¼ lbs.; a babbit hammer, 1¼ lbs.; a monkey-wrench, 8 in.

The tray obtained from the tool-room contains:

A hardened steel try square, 4 in. blade; Starrett's outside calipers, 6 in.; outside spring calipers, 4 in.; plain inside calipers, 5 in.; spring dividers, 4 in.; 6 in. steel scale, graduated to $\frac{1}{64}$ in.; centre gouge; scratch awl; centre punch; prick punch; centre chisel; file card; small oil stone; brass vise-jaws; box of chalk; and key to the upper drawer.

The tool room is furnished with drills, reamers, arbors, taps, lathe dogs, and tools of every variety in sufficient number to supply each boy with whatever he needs to complete a given job. The common cutting tools, used by each pupil, are those which he forged the year before. Each boy is given ten checks, bearing his school number, which may be exchanged at the tool-room for the articles needed; the check takes the place of the tool loaned until it is returned in good condition. A small cupboard, attached under each lathe, contains wrenches, change-

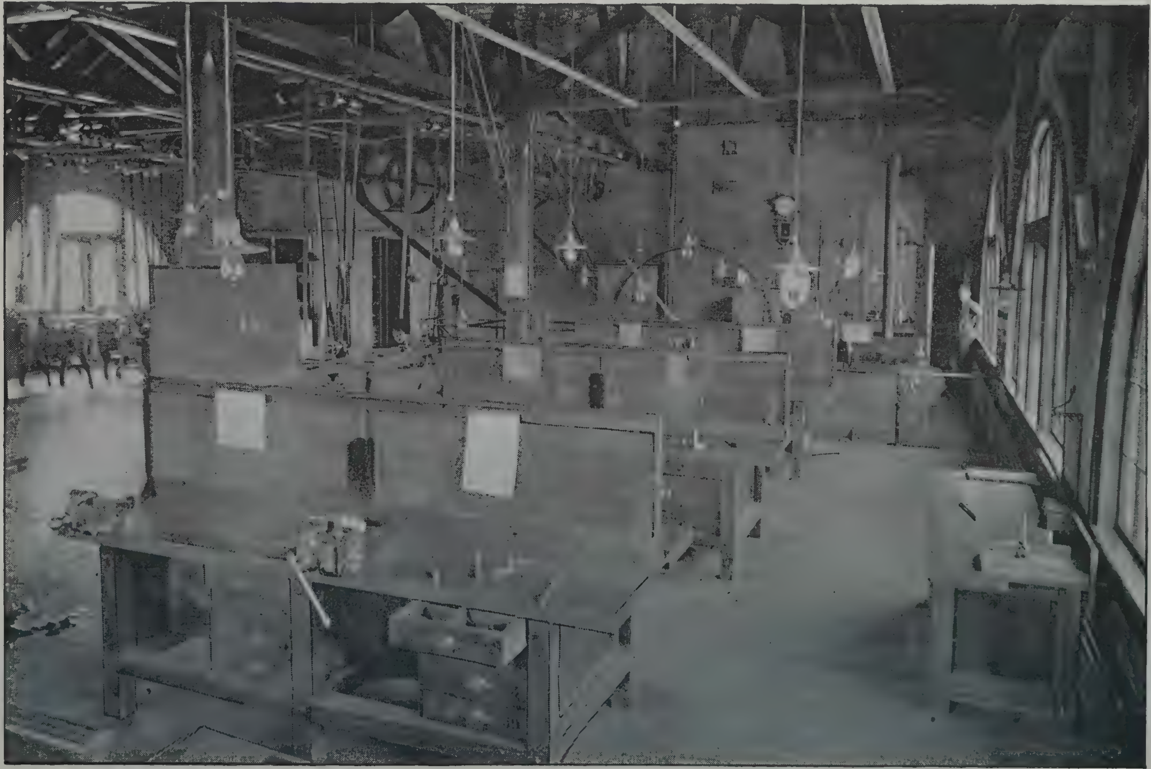


Fig. 6. Iron-Fitting.

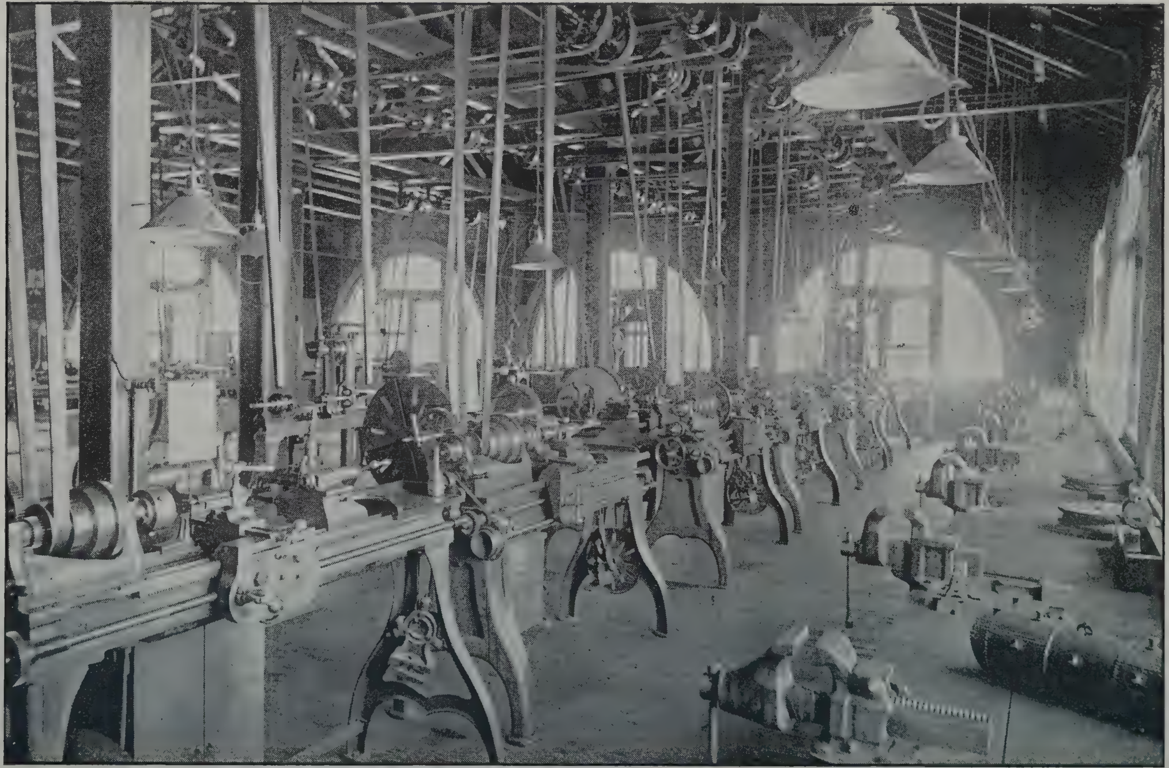


Fig. 7. Machine Shop.

gears, and other lathe accessories. Similar arrangements are made for the accessories of other machines.

The engine which drives all of the machinery is situated in the iron-working room, and is under the charge of a competent engineer, who gives a course of instruction concerning the construction and care of engines and boilers.

The Forge Room.

The room is furnished with 15 Sturtevant portable forges, each connected by proper pipes with a blower, and with an exhaust fan which prevents the poisoning of the air by coal gas, and secures perfect ventilation. Near each forge is an anvil weighing 125 lbs.; and a tool bench, 25 inches high, with a top 21 in. by 16 in., surrounded by a rim 2 in. high, to prevent tools from slipping off. Each bench is furnished with three drawers, which occupy the entire space below the top. A standard three feet high, attached to the back of the bench, supports the "blue prints" from which the pupils work. The tools upon the benches are:

Swedges, $\frac{3}{4}$ in. and $\frac{3}{8}$ in.; fullers, $\frac{1}{2}$ in. and $\frac{5}{8}$ in.; hot chisel; cold chisel; flatter; set hammer; hardy; square, 12 in.; hand hammer, $1\frac{1}{2}$ lbs.; boxwood rule, 2 ft. long; outside spring calipers; heading tools, $\frac{5}{16}$ in. to $\frac{1}{2}$ in.

The forges are supplied with: a shovel; a poker; a rake; 10 prs. of tongs suitable for handling iron varying in diameter from $\frac{1}{8}$ in. to $\frac{7}{8}$ in.; a dipper for sprinkling the fire; and a coal hod.

Six wooden pillars are fastened securely into the masonry of the floor, in convenient locations, to each of which is attached a wrought iron blacksmith's vise, having $4\frac{1}{2}$ in. jaws. Numerous other tools, needed for special kinds of work, are to be found in different parts of the room. Nothing is wanting which is likely to be needed by a blacksmith. The boilers which generate steam for the engine and for heating the building, are located in this room. These boilers also furnish steam for heating the new building for the academic department, and for driving the ventilating fan which supplies its rooms with fresh air. They are supplied with a feed-water heater, feed pump, injector, damper regulator, and all accessories of practical utility.

The Drawing Rooms.

These large, well-lighted rooms, situated upon the second floor, contain 30 double tables, 36 inches high, with a top 24 in.

by 76 in. Each table has two large drawers, designed to hold the drawing materials which are used in common by the pupils of different divisions.

These materials are: 2 hard rubber triangles, 8 in. 45°, and 9 in. 30° and 60°; 3 French curves; German silver compasses, 5½ in. with attachments; an architect's triangular boxwood scale; German silver hair spring dividers, 5 in. Alteneder's ruling pen and bow pen. Each boy has his own drawing board and T square.

The teacher's platform, measuring 6 ft. by 10 ft., is elevated 3 ft. above the floor, thus making it possible for the most distant pupils to obtain an unobstructed view of the objects placed upon the teacher's table, and of the illustrations upon the blackboards, the lower edges of which are 3 ft. above the platform. These blackboards, three in number, are placed one directly in front of another, each being counterbalanced by weights, like an ordinary window sash, so that it can be dropped down out of sight.

In the rear of the room are cases of small drawers, one of which is assigned to each pupil for his drawings and individual drawing material. Near at hand is the apparatus used in making "blue prints," including a most convenient and efficient device for holding the prints while they are exposed to the sunlight.

All the appointments of this room, like those of each of the other rooms, are first-class in every particular, and the work of the pupils shows that they appreciate their advantages.

Adjoining the drawing-rooms are a reading-room and a supply room.

The Basement.

With the exception of the space required for the janitor's room, the central portion of the basement and the entire southern wing are devoted to toilet-rooms, wash-rooms, and 275 large lockers for the accommodation of the pupils' clothing. These lockers are grouped about large sinks supplied with hot and cold water. Leading from one of the wash rooms is a well-appointed shower bath. These rooms are kept in perfect order, and are under the constant supervision of an efficient janitor. Every needed convenience has been provided, and no pupil is permitted

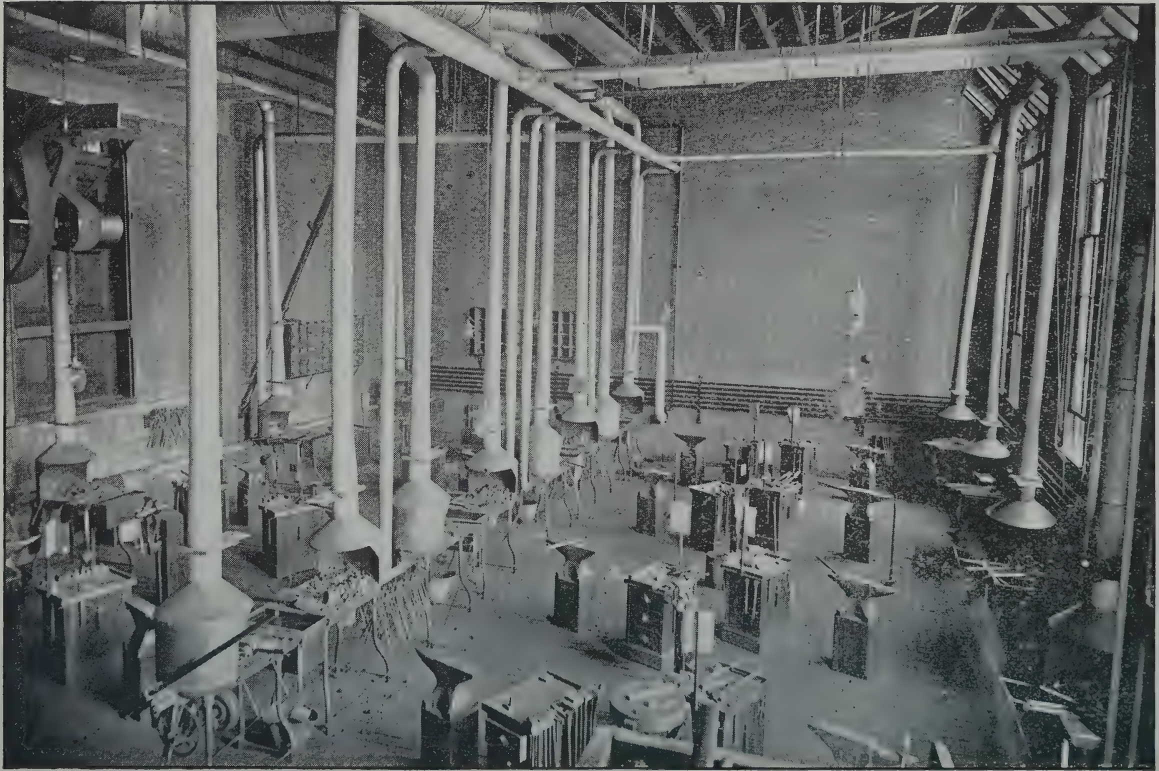


Fig. 8. Forge Shop.

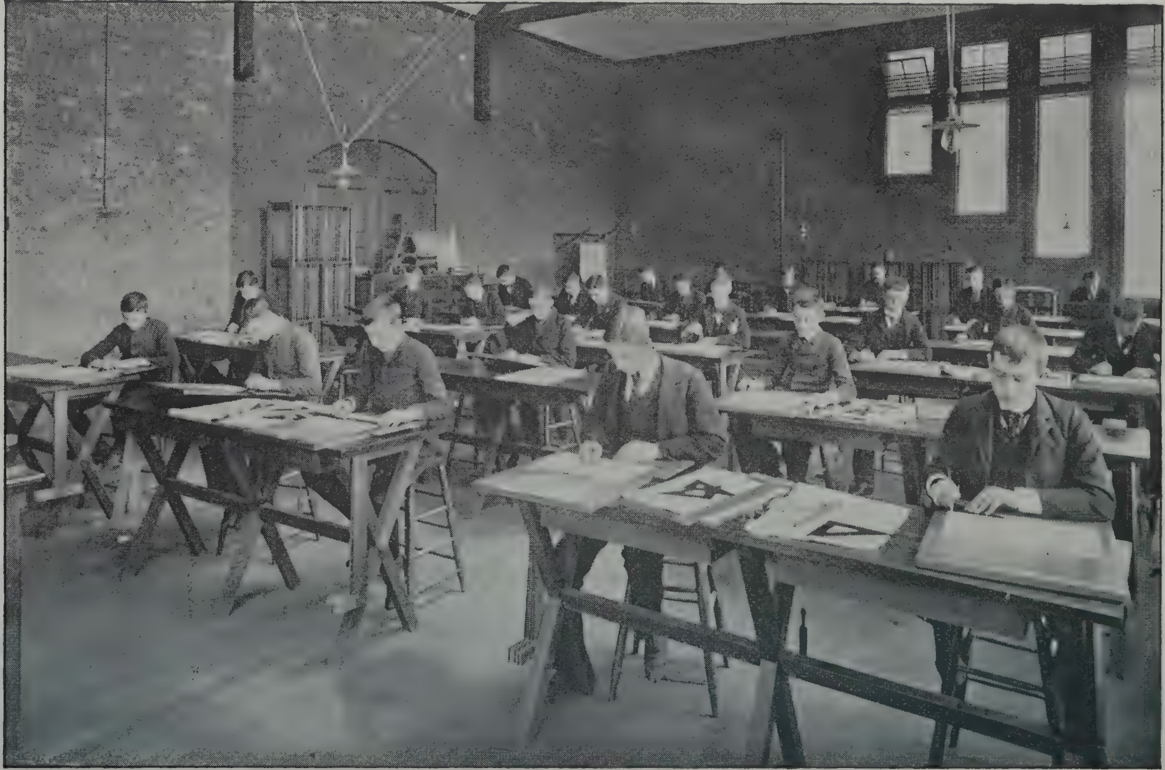


Fig. 9. Drawing Room.

to form slovenly personal habits. Each pupil must provide himself with a hair brush, comb, shoe brush, whisk broom, two towels, wash basin, and soap dish.

In the northern wing is a large kitchen, furnished with a hotel range and the best modern appliances. Adjoining the kitchen is a small dining-room in which dinners are served, at cost, to the instructors and such pupils as desire them. The remaining space in this wing is devoted to a supply room, and to a large dining-room in which pupils eat the lunches which they bring to school. Mugs of cocoa are furnished, if desired, at a very moderate price.

Course of Study, Aims, and Methods.

Although the manual training school is supported by private munificence and the mechanical work is carried on under the direction of a superintendent responsible only to the founder, it is, nevertheless, in its essential features, a part of the public school system. All who take the regular course are enrolled as pupils of the English high school, and their academic work is carried on under the direction of the principal of that institution. This divided responsibility might invite practical difficulties were the city less fortunate in the men called to manage these institutions. The success already achieved is a high tribute to their patience, tact, and good judgment, and demonstrates that the future is secure.

The school was opened in October, 1888, and its first class, fifteen in number, was graduated in June, 1891. The number graduated in 1892 was twenty-seven. The membership, January 1, 1893, was as follows :—

First year	81
Second year	31
Third year	29
Fourth year	5
Class from the Lawrence Scientific School of Harvard University	15
Class from the Engineering Department of Tufts College	39
Class from Brown and Nicholls's School	6
Specials	23
Total	9

These classes of college students are taking the full course of shop work. The instruction is given under the authority of the colleges, and, in each case, is counted as a part of the student's collegiate course.

The three years' course of study, adopted tentatively at the outset, has been considerably modified by experience, and it is now expected that the course will be extended to four years, and that the work will be carried forward substantially in accordance with the following outline :

First Year.

English High School.	Hours per Week	Months.	**Manual Training School.**	Hours per Week.	Months.
Elementary Geography,	5	5	Drawing,	5	10
Elementary Algebra,	5	5	Carpentry,	10	10
English History,	3	7	Joinery,		
Civil Government,	3	3	Iron-fitting,		
English Language,	2	10			
English Literature,					

Second Year.

English High School.	Hours per Week	Months.	**Manual Training School.**	Hours per Week.	Months.
Algebra,	5	10	Drawing,	5	10
Physics,	3	10	Pattern-making,	10	10
English Language,	2	10	Casting,		
English Literature,			Blacksmithing,		

Third Year.

English High School.	Hours per Week	Months.	**Manual Training School.**	Hours per Week.	Months.
Advanced Algebra,	3	5	Drawing (alternate day).	2	10
Plane Geometry,	3	5			
English Language,	2	10	Machine-shop Practice (alternate days),	2	10
English Literature,					
Physics,	5	5	Note.—4 h. daily in E.H.S. 2 h. daily in M T.S.		
Chemistry,	5	5			
French*,	5	10			
Lectures on Civics,	.	.			

Fourth Year.

English High School.	Hours per Week	Months.	**Manual Training School.**	Hours per Week.	Months.
Solid Geometry,	2	5	Drawing (alternate days),	2	10
Elementary Trigonometry,	5	3			
Reviews in Mathematics,	2	2	Machine-shop Practice (alternate days),	2	10
Chemistry,	3	10			
French,*	3	10	Note.—4 h. daily in E.H.S. 2 h. daily in M.T.S.		
English Language,	2	10			
English Literature,					

*Elective.

In addition, in the English high school, there are general exercises at appropriate intervals, such as the reading of standard authors, the recitation of select passages from them, and the writing of compositions; and, in the manual training school, health and emergency talks, and such lectures on business, government, citizenship, and allied topics, as may be deemed serviceable to the boys.

The pupils are supplied with a handbook, to be studied in connection with the health and emergency lectures, upon which they are required to pass an examination.

A diploma will be given to those who have successfully completed the third year of the course and are unable to give the time for the fourth year.

Drawing.

The course in drawing is thorough and systematic, and admirably calculated to prepare boys to interpret correctly complicated mechanical drawings, and to execute intelligently whatever work may be intrusted to them. The work begins with lines — straight, curved, and grouped — special attention being given to evenness of grade. This work is followed by simple geometrical problems, and projections of familiar solids. The work of the second year consists of advanced projections and advanced geometrical work, done in ink, together with some machine drawing. During the third year pupils execute practical wood-working and machine drawings, with specifications, ready to be put into the hands of a carpenter or machinist. Throughout the course much practise is given in free-hand drawing calculated to enable pupils to prepare quickly sketches suited to the numerous practical purposes for which complete detail drawings are unnecessary. The representative exercises (Figs. 10, 11, and 12) give an idea of the character of the elementary work, and the working drawings of the marine engine (Figs. 13 and 14) may be taken as typical of the more complicated drawings of the latter part of the course.

Considerable attention is given to a system of lettering for drawings and a comparison of the monthly tests shows gratifying progress. The aim is to secure facility in the execution of plain work of practical value. Little ornamental work is attempted. At graduation, a large proportion of the boys are able to letter satisfactorily valuable architectural or engineering drawings.

From the outset pupils are taught to interpret mechanical drawings and to work from them. All exercises, even those that involve only the most simple operations, are presented to the pupils in the form of " blue prints " from carefully prepared working drawings. These "blue prints" are mounted upon heavy cardboard, so that they can be conveniently suspended for reference at each pupil's bench. Full specifications are always given, and no effort is spared to secure the greatest practicable accuracy of execution. All completed work is examined and marked by the instructor with the same care which is given to written tests in other schools.

It is difficult to give a clear idea of the range of the work carried on in the different rooms, but the general statement may be made that the exercises are designed to illustrate fully the various uses of all the tools which have been enumerated, and to give sufficient practice to secure considerable skill in manipulation. The aim is to demonstrate the value of manual training as an educational force. Every exercise is chosen with reference to its power to train the eye and the hand and to develop facility in the use of particular tools. Every task or process is discontinued as soon as the pupil has learned to do it well, and a problem calculated to call forth new power is substituted. The school disclaims any design to teach special trades, but an earnest effort is made to fit boys to enter upon their life work without loss of time, and with greatly diminished liability to err in the choice of occupation. Experience has shown that the graduates readily find suitable employment at higher wages than they would have been likely to receive without this special training.

The following table gives the names of graduates, and shows their present occupation :—

CLASS '91.

Batchelder, Harold H., draughting, E. D. Leavitt, Mechanical Engineer, Cambridgeport; Copithorne, William H., draughting, American Bell Telephone Co., Boston; Dean, Arthur D., student, Mass. Inst. Technology; Eaton, Joseph J., student, Lawrence Scientfic school, Cambridge; Gibson, Samuel P., stenographer, Thos. P. Frost, Forwarding Agt., Old Colony R. R., Boston; Kenney, Geo. F., machinist, Hawkins Machine Co., East Cambridge; Littlefield, Wm. L., cadet, U. S. Naval Academy, Annapolis, Maryland; Lounsbury, John N., draughting, Geo. F. Blake Mfg. Co., East Cambridge; Manning, William L., draughting, Brooklyn City Ry. Co., Boston; McCue, Henry J., draughting, James Fogerty, Architect, Cambridgeport; Keefe, Thomas J., draughting, West End Street Ry. Co., Boston; Quinn, Albert W., student, Lawrence Scientific school, Cambridge; Sias, Frank S. V., student, Mass. Inst. Technology; Smith, Percy C., die sinker, Brigham & Co., Boston; Sanderson, Edward T., draughting, Warren A. Rodman, Architect, Boston.

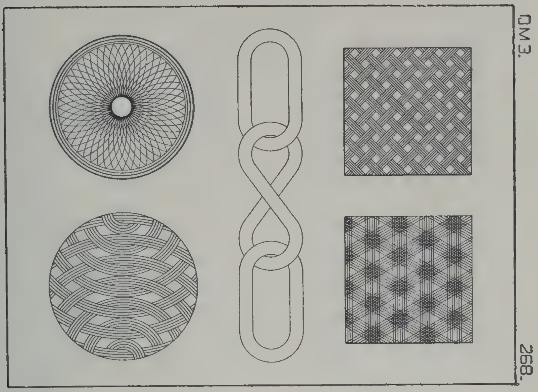


Fig. 10. Pen Exercise.

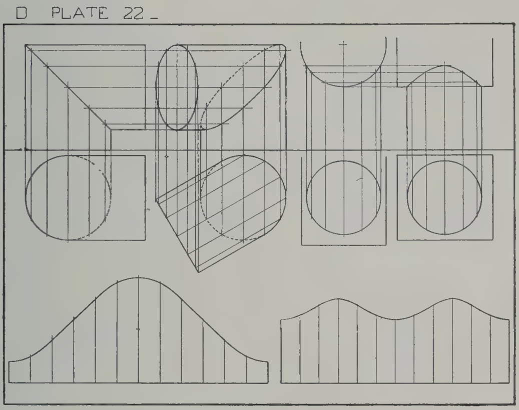


Fig. 11. Intersection and Development.

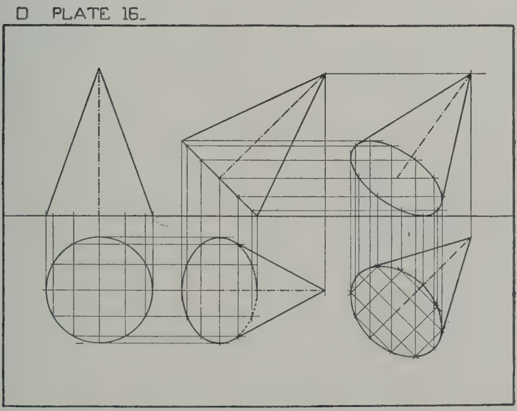


Fig. 12. Projection.

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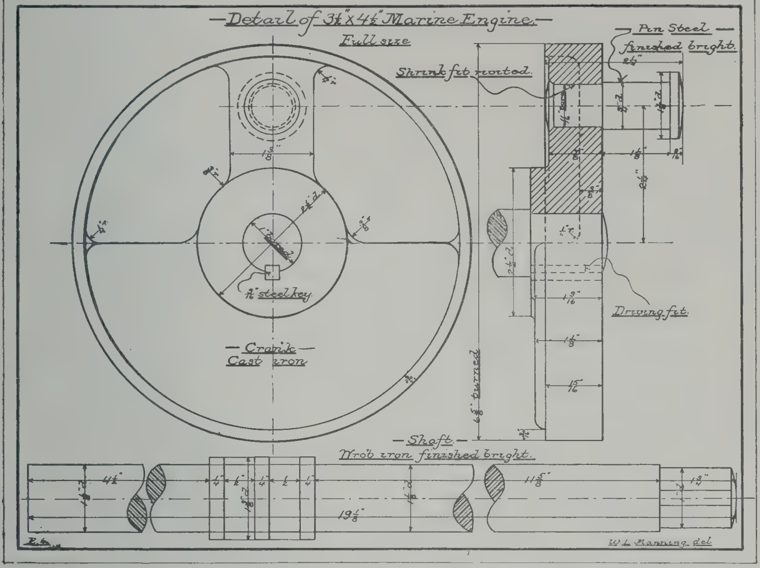
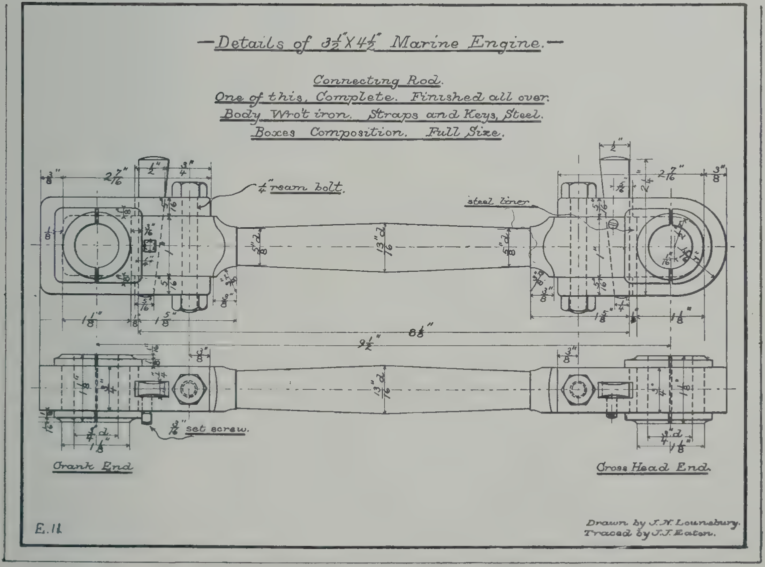


M_ PLATE 30_



—Details of 3½"X4½" Marine Engine.—
Connecting Rod.
One of this, Complete. Finished all over.
Body Wro't iron. Straps and Keys, Steel.
Boxes Composition. Full Size.
¼" ream bolt.
steel liner
9½"
6⅝"
3/16" set screw.
Crank End
Cross Head End.
E.11
Drawn by J. N. Lounsbury.
Traced by J. J. Eaton.

Fig. 13. Detail Drawings of Parts of Marine Engine.

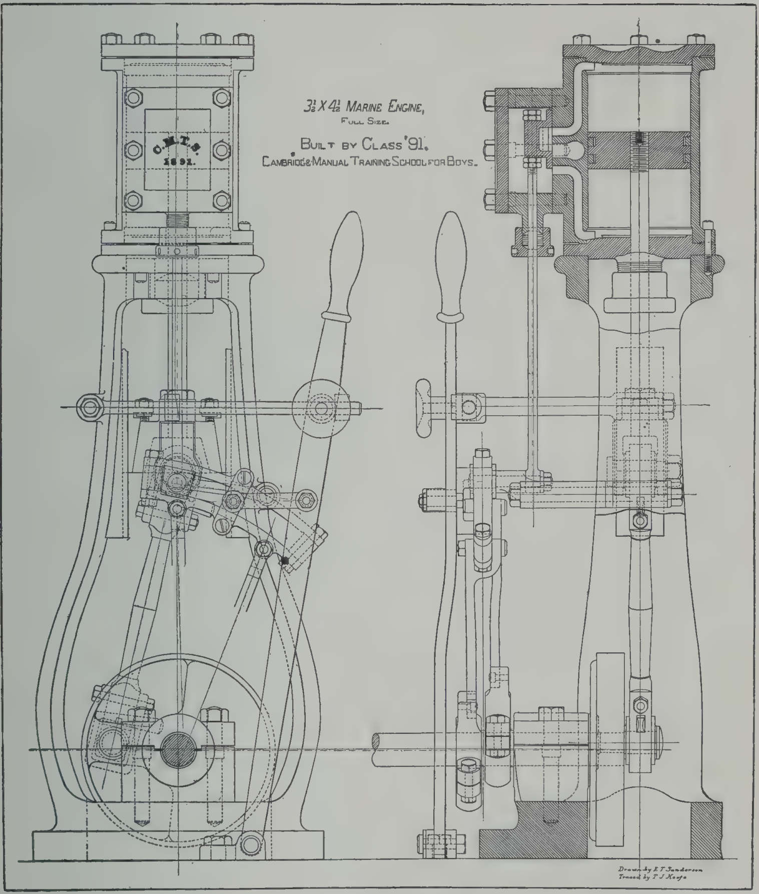


Fig. 14. Working Drawing of Marine Engine.

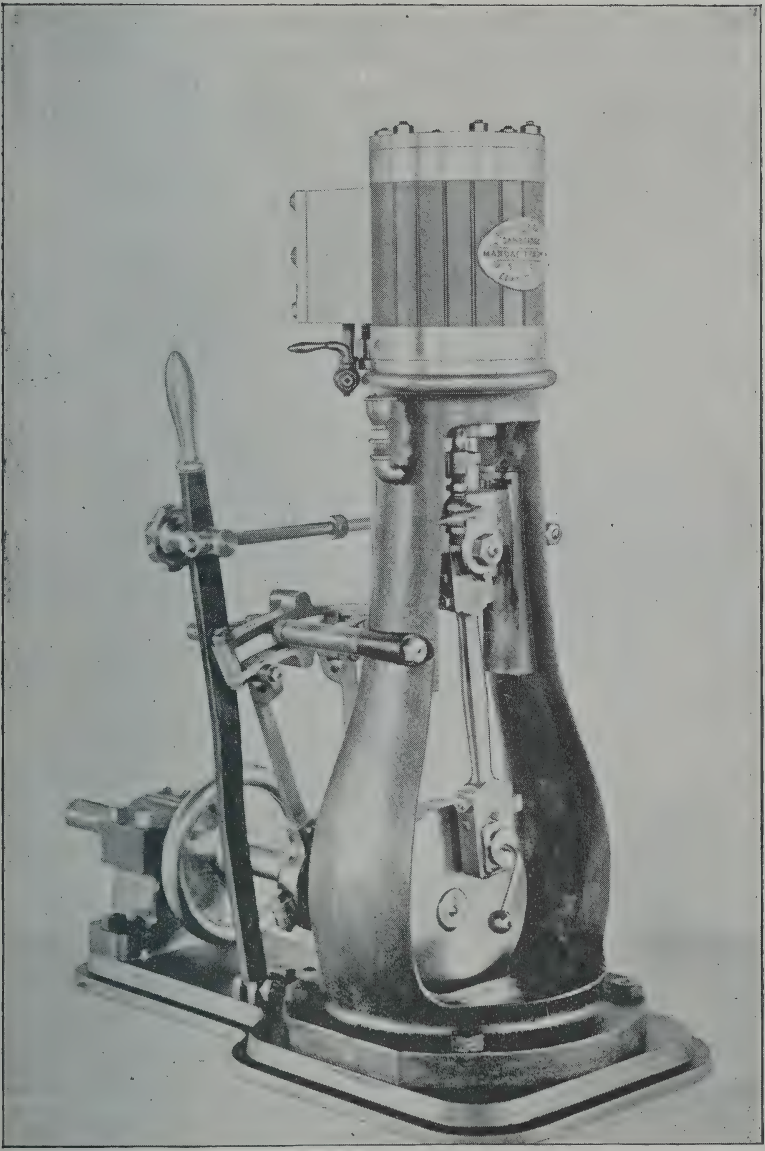


Fig. 15. Marine Engine. Class '92.

CLASS '92.

Allen, G. F., electrotyping, University Press, Cambridge; Altmiller, C. A., draughting, Boston Bridge Works, Cambridge; Barbour, E. F., electrical work, General Electric, Co., Oakland, California; Carr, R. L., draughting, Boston Bridge Works, Cambridge; Clark, F. H., clerk, D. M. Hazen & Sons, Cambridge; Connelly, J. J., finisher, Mason & Hamlin, Cambridge; Crawford, Jr., J., clerk, Rogers, Brown & Co., Boston; Davis, E. G., draughting, Geo. F. Blake Mfg. Co., Cambridge; Dougherty, P. L., Institute Course;* Elliot, R. L., draughting, Boston Bridge Works, Cambridge; Fairchild, E. R., clerk, H. L. Slade & Co., Boston; Fiske, G. L., electrical work, Cambridge Electric Light Works; Gass, J. A., salesman, M. A. Parker & Co., Boston; Harlow, R. C., clerk, Manual Training school, Cambridge; Hunnewell, F. A., Institute Course;* Jouett, F. W., salesman, Cobb, Bates & Yerxa, Boston; Lincoln, F. A., electrical work, Edison Gen. Electric Co., Boston; Moore, G. R., draughting, Boston Woven Hose and Rubber Co., Cambridge; Muzzey, G. E., supply department, Fitchburg R. R., Boston; Richards, E. L., Fitchburg R. R., Boston; Ritchie, I. G., draughting, Damon Safe Co., Cambridgeport; Ricker, W. E., invoice clerk, W. H. Raymond & Co., Boston; Ruggli, E. W., Institute Course;* Saldana, M. A., Lawrence Scientific school, Cambridge; Scotton, F. B., Asst. Drawing Instructor, C. M. T. S.; Smith, F. O., draughting, Geo. F. Blake Mfg. Co., Cambridge; Stebbins, C. B., Institute Course;* Stiles, C. F. Institute Course;* Sweetser, W. J., electrical work, Thompson-Houston Co., Lynn; Taylor, C. L., draughting, Boston Woven Hose & Rubber Co., Cambridgeport; Wade, H. E., clerk, H. M. Bickford, Boston; Wiseman, T., machine department, Curtis, Davis & Co., Cambridge; Whitney, O., electrical work, Cambridge Fire Alarm; Zittle, G. J., Institute Course.*

The following list will serve to give a tolerably adequate notion of the variety of the exercises:

Carpentry.

Saw and chisel exercises; halved joints; blind mortise and tenon joints; open mortise and tenon joints; halved dovetailed joints; dovetailed joints; brace joints; boring exercises; dowel joints; table leg and rail; triangle, 30°, 60°, and 90°, glued; model of a newel post; and a tool chest. (Figs. 16 and 17.)

Turning and Pattern Making.

Straight cylinder; broken cylinder; stepped cylinder cone; curves, convex, concave, and compound; spheres; banister posts; rosettes; mallets and handles; rings of round sections; rings of octagonal sections; engine crank; lathe face-plate; ratchet wheel; T pipe fitting; sheave wheel, hand wheel, etc. (Fig. 18.)

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*These graduates in the three years' course are now pursuing the course in the English high school and manual training school designed to prepare for admission to the Mass. Institute of Technology or the Lawrence Scientific School.

During the last half of the second year, the pupils of each class make patterns of all the parts of some machine. The castings are obtained and the machines completed during the next year.

Blacksmithing.

Exercises in drawing, upsetting, bending, twisting, riveting, welding, punching, and tempering. Some of the articles made are: the wedge; the square point; sign dogs; stone dogs; S hooks; bent rings; welded rings; harness hooks; truck hangers; hook and staples; swivels; shafting keys; shaft with shoulders; bent angle irons for strengthening joints; welded angle irons; chain links; eye bolt and ring; clevice with bolt and cotter; bolts and nuts, square and hexagonal; lathe tools; tempered spring; flat drill; hammer; blacksmith's tongs, etc.

Metal Working.

Exercises in chipping, filing, scraping, polishing, fitting of sliding parts, drilling, hand-turning, bolt cutting, tapping etc. Some of the articles made are: surface gauge, calipers, electric binding posts, and turned brass ornaments.

The work of the senior year in this room consists of elementary exercises designed to exhibit the methods of grinding and setting tools, and adapting them to the production of desired results upon surfaces of different shapes, together with general machine-shop practice showing the various uses of the different machines; straight, taper, and irregular turning; screw cutting, chucking, boring, and reaming; use of boring bars, as in the cylinder of a steam engine; plain and irregular work on the planer and the shaper; the slotting of shafts for keys, etc.

So far as possible these operations are performed upon articles of practical use, such as bolts, shafts, hand wheels, pulleys, and tools for various purposes; and upon the parts of some machine, which each class constructs, — for example, a steam engine, dynamo, or lathe.

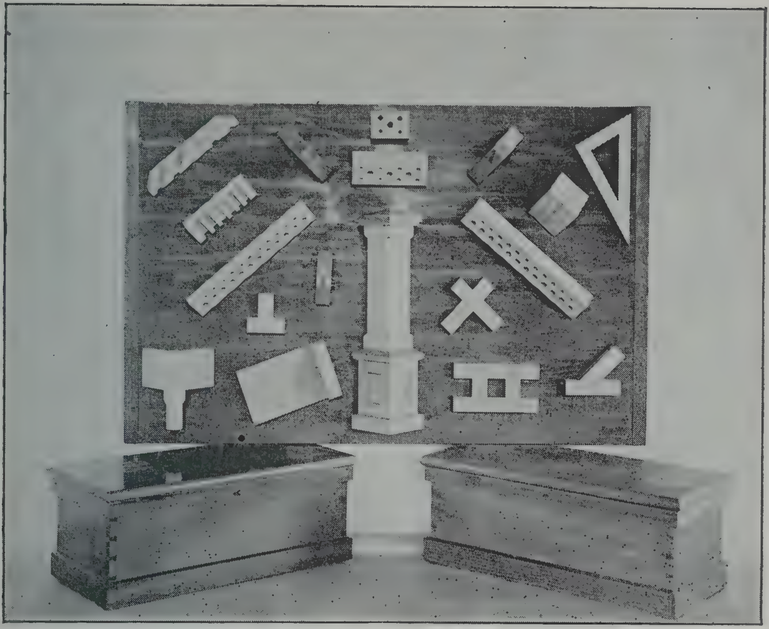

Fig. 16. Exercises in Carpentry and Joinery.

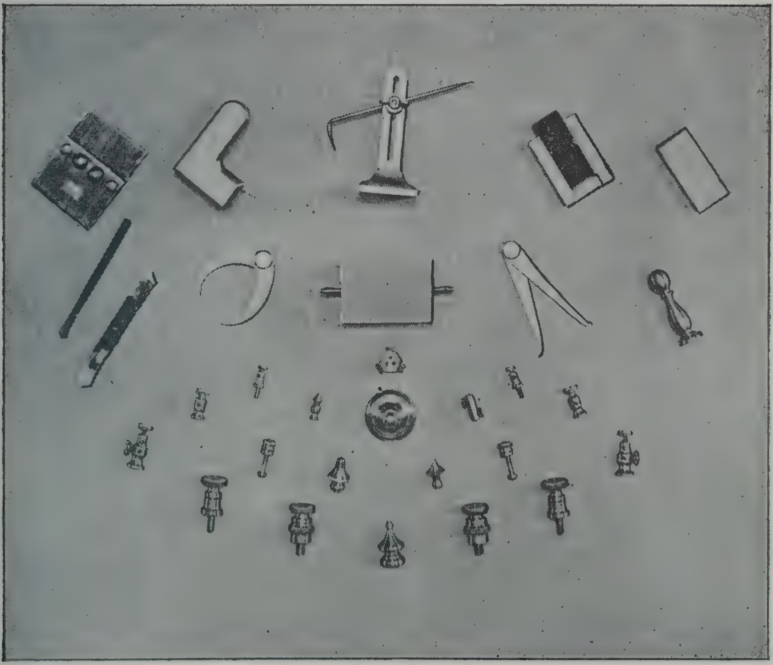

Fig. 17. Exercises in Iron Fitting and Hand Turning.

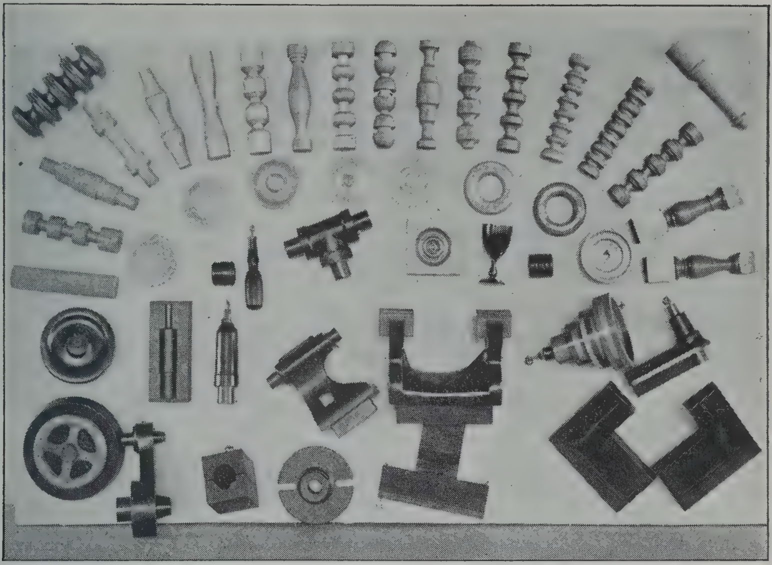

Fig. 18. Exercises in Turning and Pattern-Making.

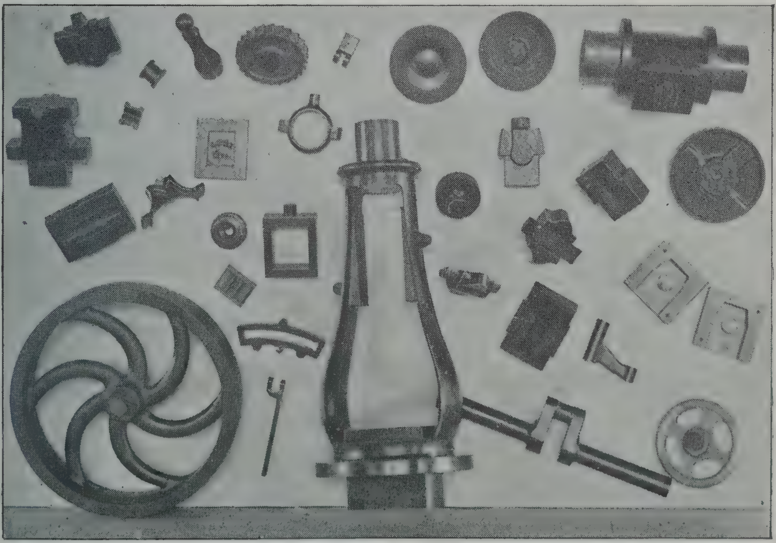

Fig. 19. Exercises in Turning and Pattern-Making.

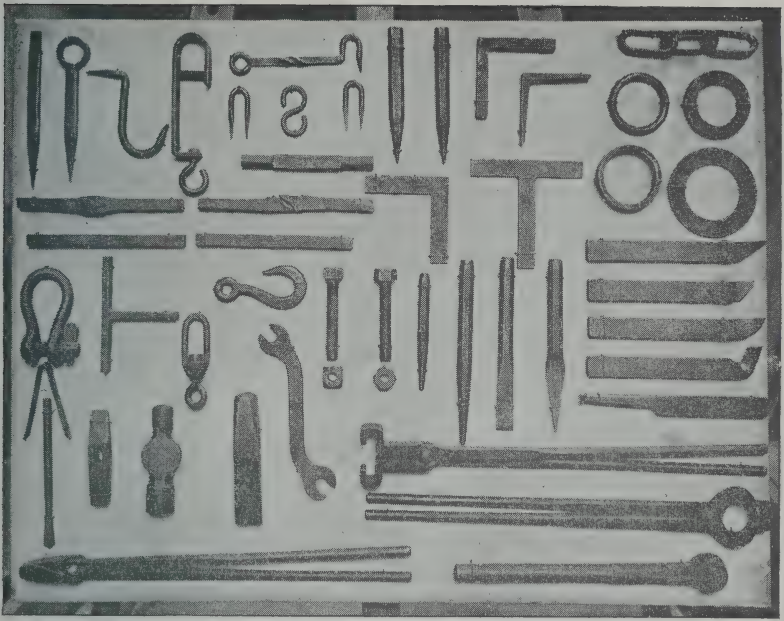

Fig 20. Exercises in Forging.

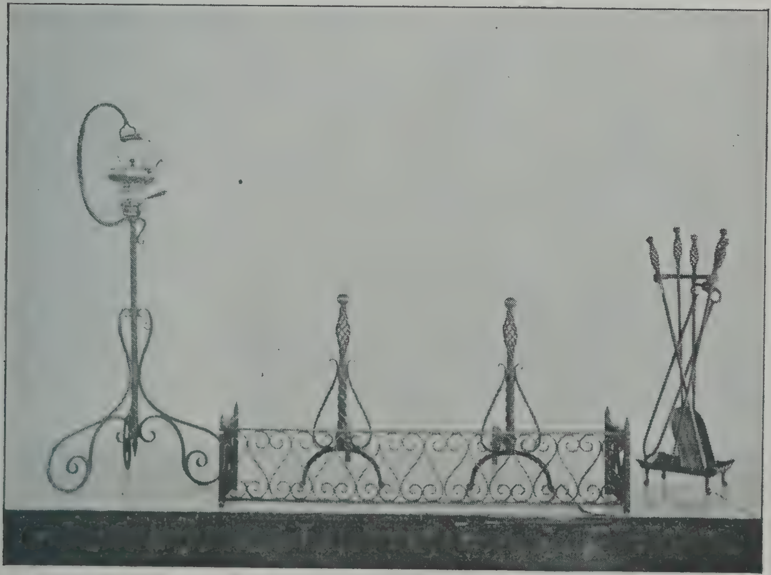

Fig. 21. Fire Set. Class '93.

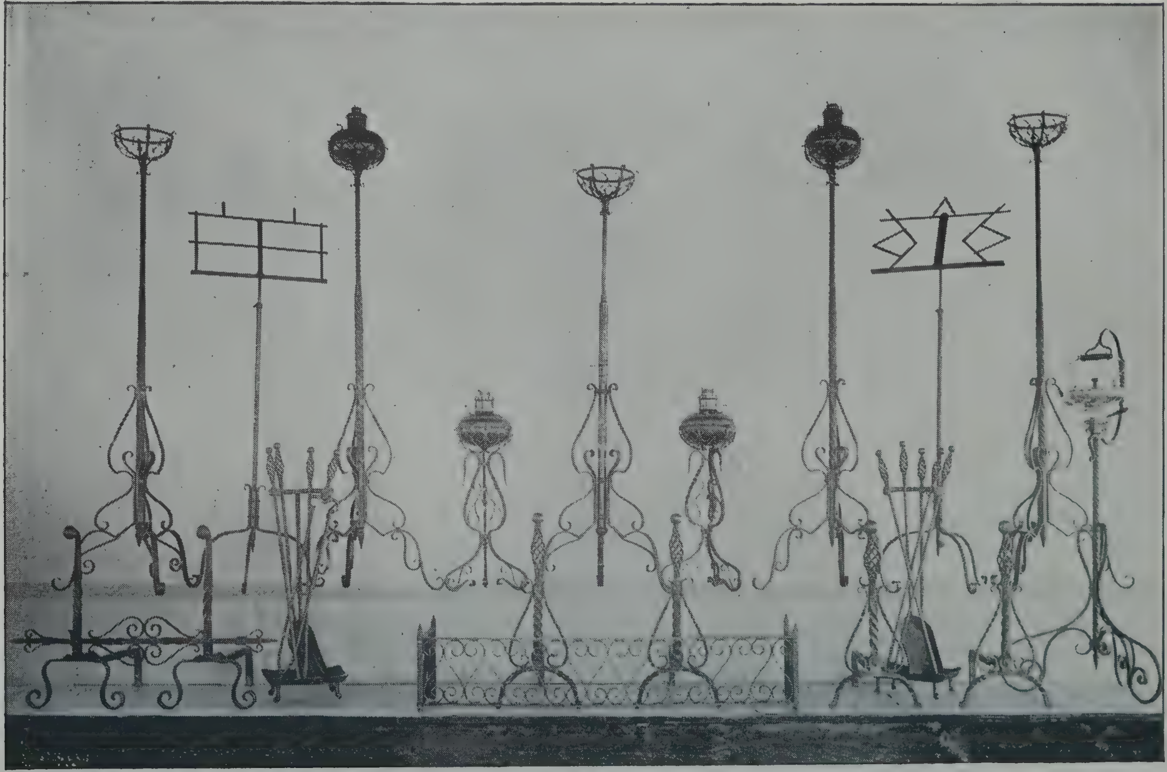

Fig. 22. Wrought Iron Work. Class '93.

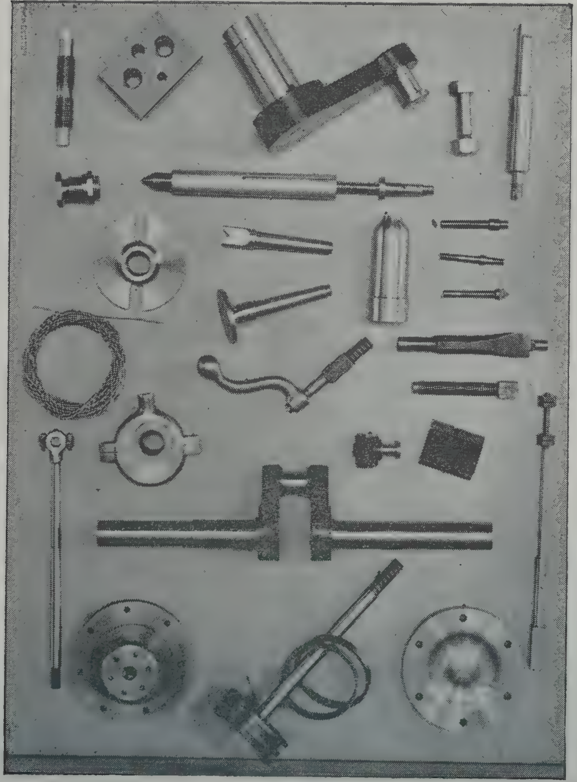

Fig. 23. Machine Shop Exercises.

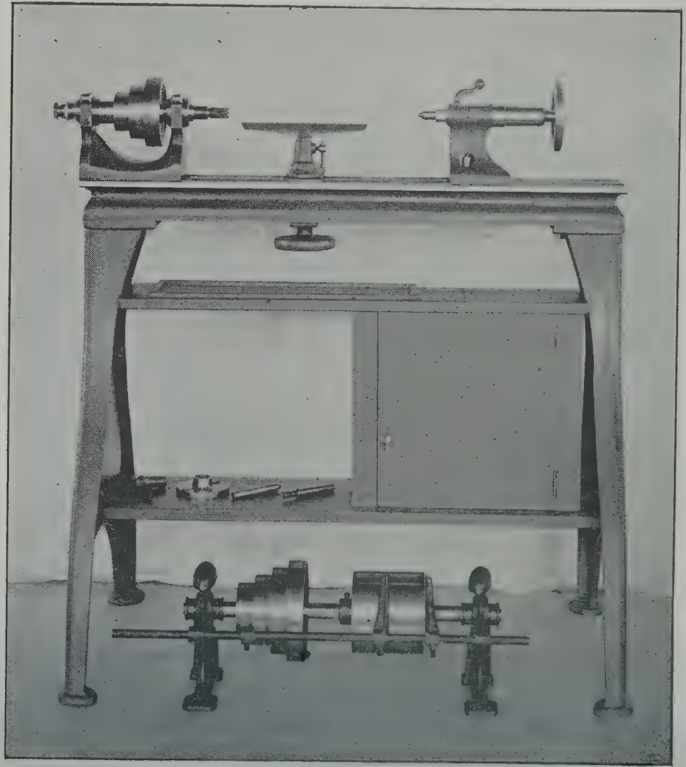

Fig. 24. Speed Lathe. Class '91.

The class of 1891 completed four lathes, of which two are now used in the pattern-making department, and two in the machine shop. The class of 1892 made four small upright stationary engines of three horse power, four lathes, a dynamo, and a phonograph. Various special tools and fixtures are made by the pupils as they are needed from time to time.

An important auxiliary feature of the school is the fire drill, intended to furnish systematic training in the manipulation of the various forms of apparatus used in extinguishing fires and saving life. The drill tower, which is located about fifty feet north from the end of the main building, is a wooden structure, 10 feet by 12 feet, and 34 feet high. It is provided with stairways adapted to running up lines of hose, and with all needed appliances for successful practice with the life net, the life belt and line, the extension ladder, and all similar apparatus which experience has shown to be suited to the purposes of this drill. The practice with the apparatus is regularly preceded by systematic drill exercises designed to promote general physical development, and to secure promptness and efficient concerted action in cases of emergency. At the outset this drill was conducted after school hours and was voluntary work on the part of pupils. Experience has so far demonstrated its usefulness that it has been made a part of the required work of the school. Many of the exercises are based upon military tactics, and it is believed that they yield all of the important educational advantages to be derived from military drill. They have the added advantage of intimate connection with the work which must be done by a large body of men for the protection of life and property. (Figs. 27, 28, 29, and 30.)

Most of the janitor work of the building is done, after the school session, by boys who are paid by the hour for their services. The entire steam plant, with the exception of the boiler, was put in by boys working under the direction of the superintendent. Much of the clerical work of the office is done by pupils. Of course, none of this work is required; but, as the tasks are never unduly hard, and a reasonable recompense is given, many boys are glad to avail themselves of this opportunity to earn a little money. It is thought that this arrangement has positive educational value.

No one who makes himself acquainted with the working of

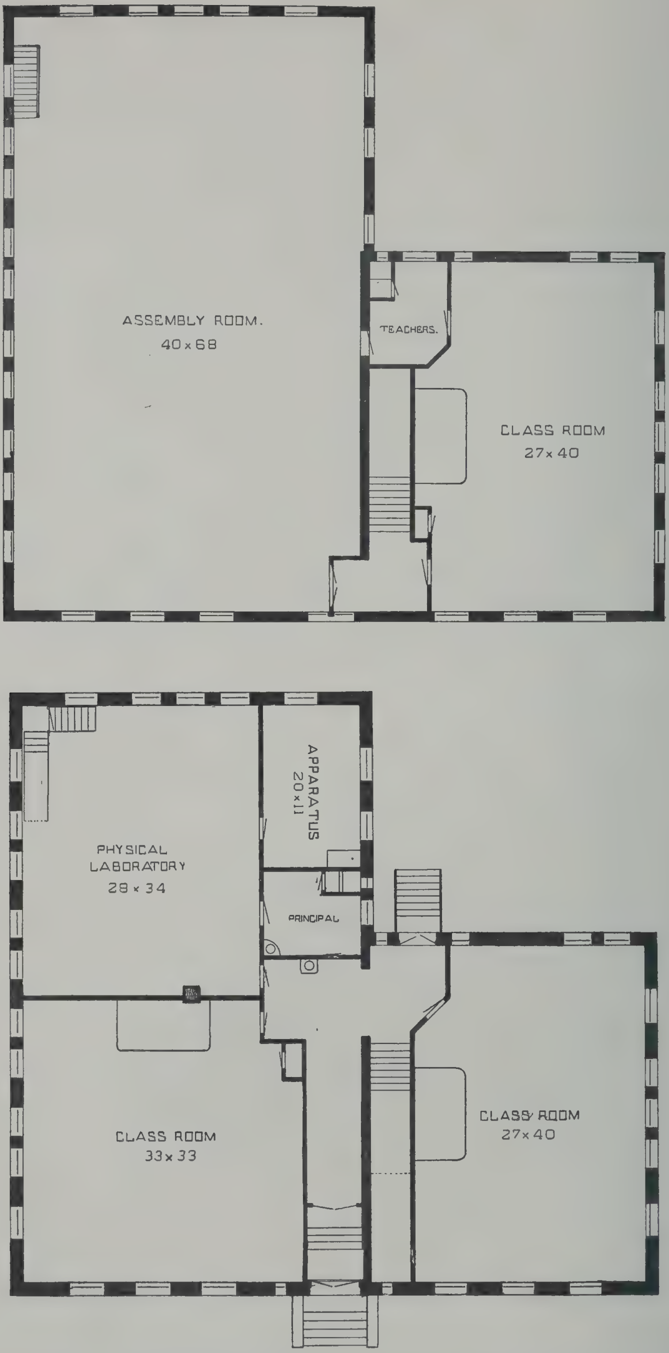

Fig. 25. Floor Plans of Building for Academic Department, erected in 1893.

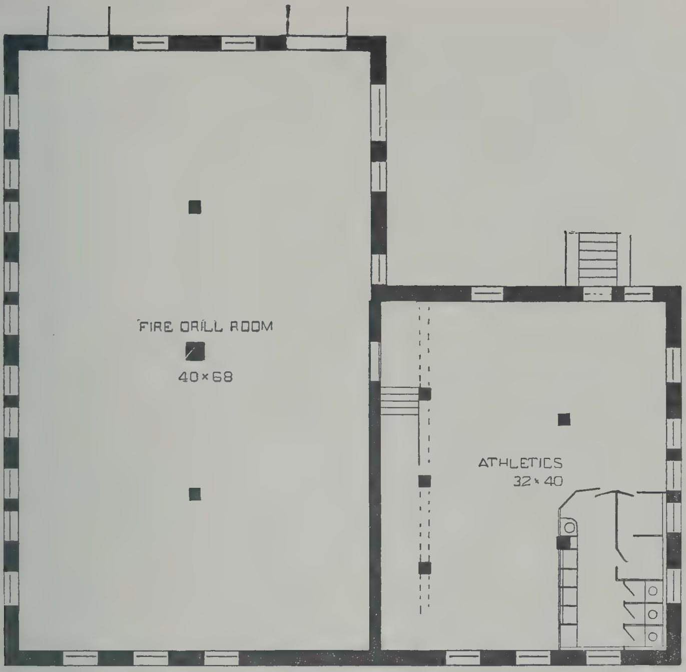

Fig. 26. Plan of Basement of Building erected in 1893.

this school can fail to be impressed with the reasonableness of its claims. Its career thus far has been free from exaggerated predictions or unreasonable expectations. It originated in a profound conviction that manual training is an important educational factor having immense possibilities yet undeveloped. Its mission is to aid in developing these possibilities. No pains nor expense has been spared to make its equipment as complete and perfectly adapted to its purposes as possible. Whenever a new need has appeared it has been quickly supplied. Experience has shown that it is highly desirable to have pupils who work at the bench seated for study in rooms conveniently near to their work. Accordingly during the winter of 1892–93, the generous founder of the school erected a building admirably adapted to accommodate the academic work of the manual training course. This building is placed in the rear of the original structure, and is connected with it by a covered passage-way. It contains (Figs. 25 and 26) three large school rooms, a physical laboratory and apparatus room, and an assembly room. A considerable portion of the basement is devoted to a large drill room, near which are toilet rooms, wash rooms, shower baths, and all needed conveniences for the athletic teams. It is confidently believed that the conditions for testing the educational value of manual training are now so satisfactory as to leave little to be desired by its most exacting advocates.

This institution, which a noble generosity has provided and sustains, makes merely the modest claim that it is calculated to prolong the school life of many boys who would not attend the ordinary high schools, and to give them valuable training of the eye and the hand, together with much useful knowledge, thus fitting them to grapple more successfully with the problems of life.

All thoughtful men agree that the value of any school depends far less upon the facts learned than upon the habits formed, the feelings aroused, the ambitions stimulated, and the moral impulses deepened into springs of action. The methods of this institution clearly tend to cultivate self-control, kindness, politeness, and manliness, not less than those of other schools. Many of the tasks set for the boys make great demands for patience, perseverance, and painstaking care. Here, as everywhere, patient labor is the price of excellence. The gentlemanly bearing of the pupils, the remarkable interest which they manifest in great and ever-increasing beneficence.
their work, and the sacrifices of personal convenience which they readily make for the school, testify that its influence is stimulating and wholesome. The intimate association of the boys with the courteous and skilful mechanics from whom they receive instruction can hardly fail to inspire them with a higher sense of the dignity of honest toil.

The manual training school is merely an additional factor in the Cambridge school system. It supplements the work of the grammar schools with a useful course of study likely to prove peculiarly attractive to many boys. It does not interfere with the work of any other school, and has none of the objectionable features of those manual training courses which are so arranged as to demoralize the classes of the grammar schools and diminish the efficiency of their work. It is impossible to pay too high a tribute to the generosity which supplements the public school system, at private expense, with an institution of such

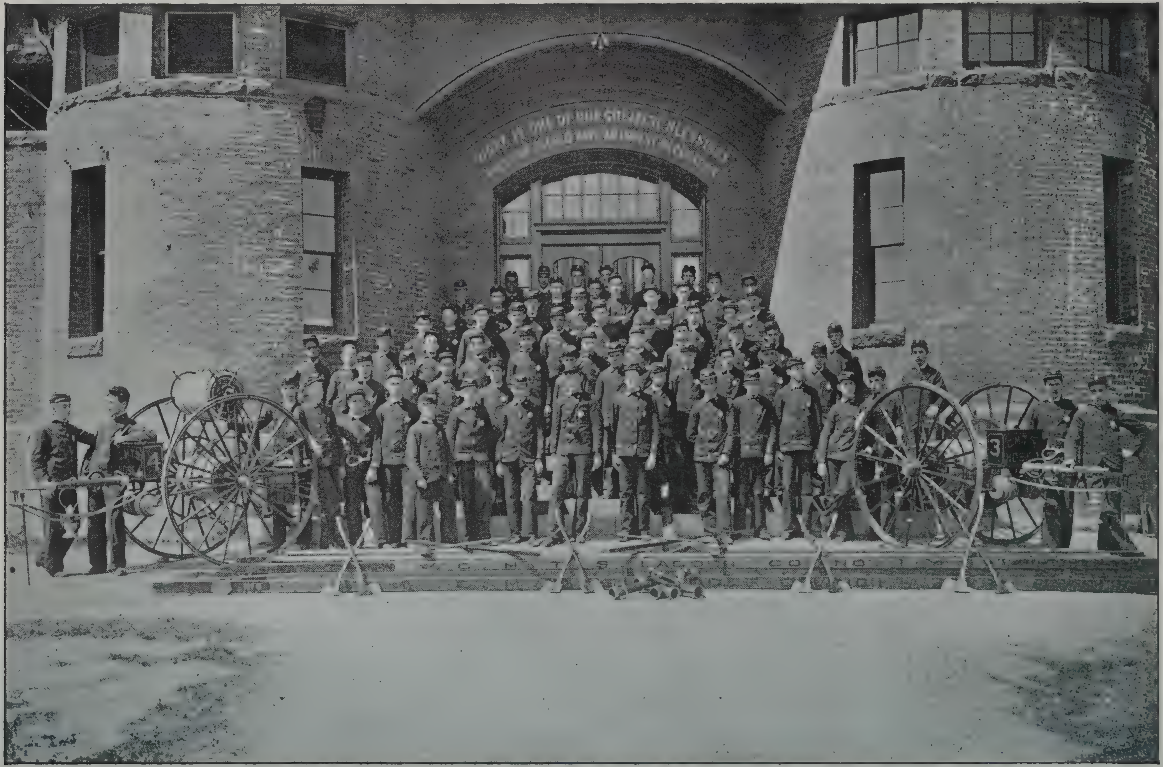

Fig. 27. Fire Drill Battalion.

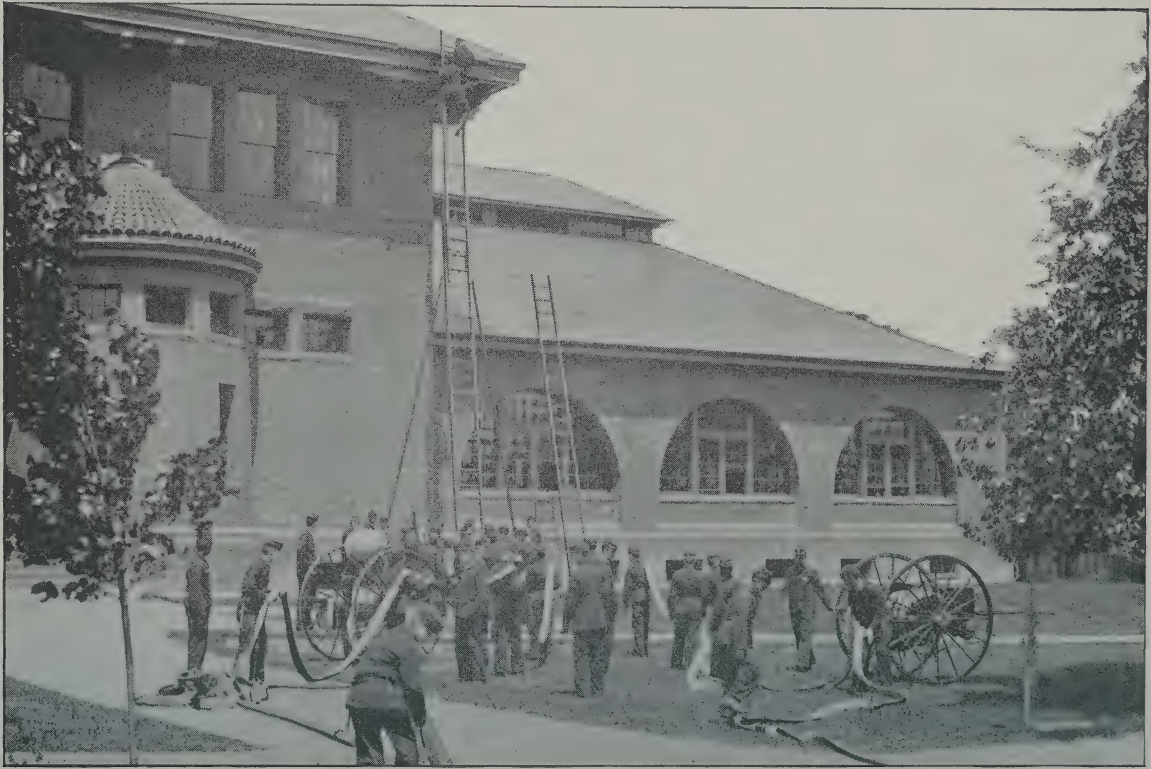

Fig. 28. Fire Drill—Answering an Alarm.

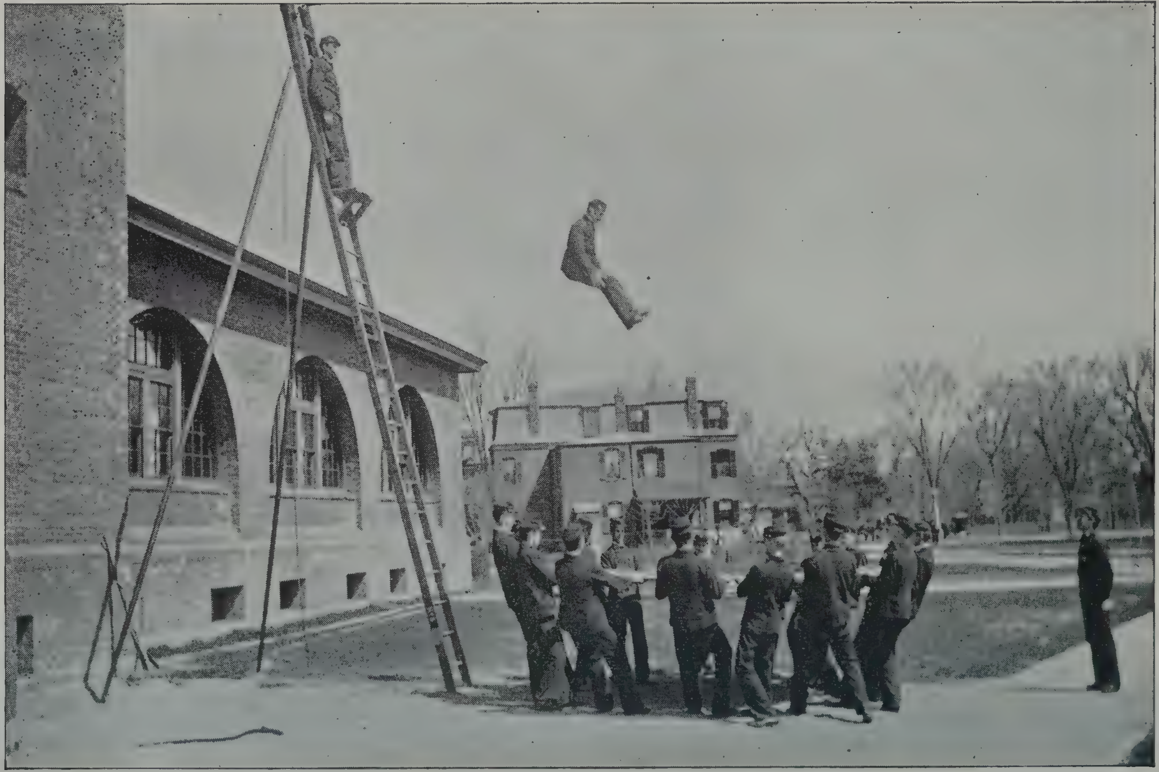

Fig. 29. Fire Drill—Practice with Life Net.

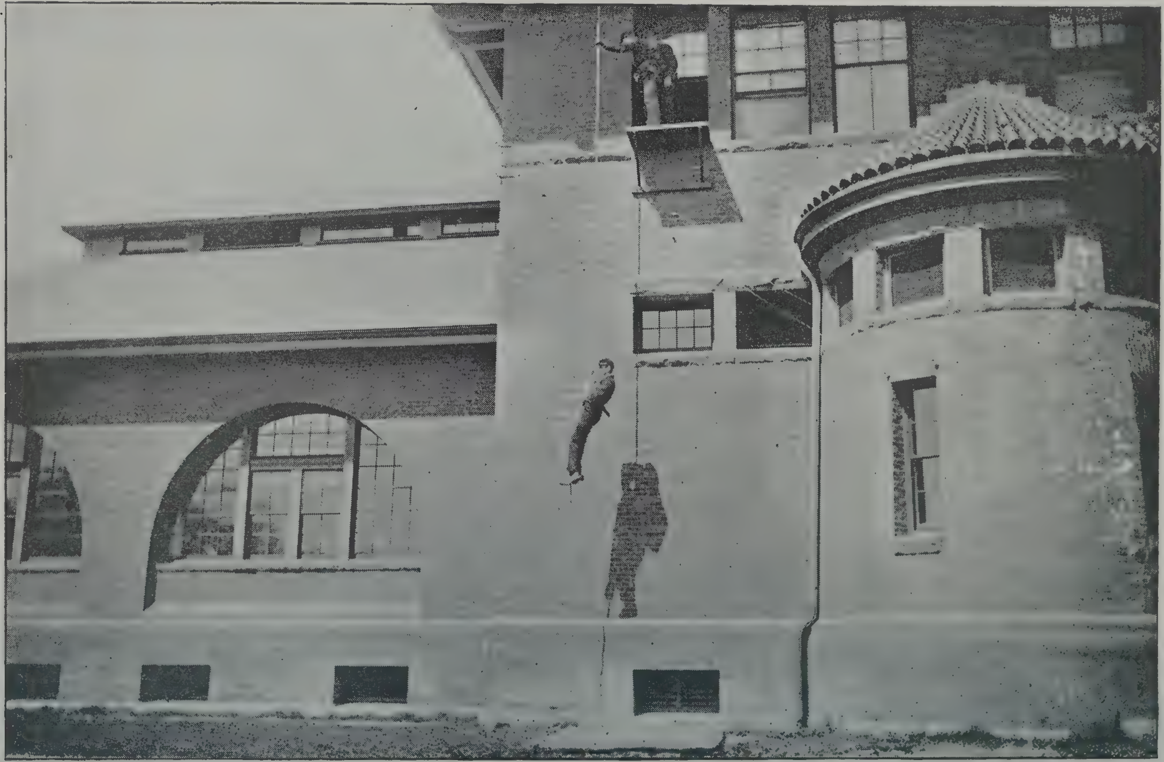

Fig. 30. Fire Drill—Practice with Life Rope.

THE MORSE SCHOOL HOUSE.

This school-house is in Ward Four, at the corner of Brookline and Allston streets. It is a brick building with free-stone trimmings, 110 feet long and 92 feet wide; but in the central part of one side there is a recess of 15 feet by 40 feet. The building is three stories high, and contains fourteen school rooms. Twelve of these are 32 feet square, and the other two are 32 feet by 35 feet. It has a hall 64 feet by 40 feet, a principal's room and a reading room, each 16 feet by 12 feet; a toilet-room for teachers and also one for girls, and the usual conveniences of cloak-rooms, store-rooms, and closets found in modern school-houses. The plans were drawn by architect George F. Fogerty of Cambridge, and the contractors were Messrs. Donahue Brothers of Medford. The Smead system, including the dry-closet arrangement, is used in heating and ventilation. The cost of the land, building, and furniture was: land (about 25,000 square feet) $6,000; building, $75,287; furniture, $3,256, — a total cost of $84,543.

The superintendent of public buildings in his annual report speaks of this school-house as follows: "This structure is one of the largest in our city, convenient in all its appointments, beautiful in design, and imposing in appearance."

The building was completed early in September, 1891, but owing to delay in the delivery of the furniture it was not occupied until the 22d of the month. The formal dedication of the building occurred on Wednesday, the 18th of November. Mrs. Alice Freeman Palmer gave the principal address.

The school is named for the Hon. Asa P. Morse, who for more than sixteen years was a member of the school committee.

The school differs from the other schools in having all the primary grades, as well as all the grammar grades, and in being the only grammar school containing all the grammar grades under the charge of a lady principal.

At the dedication of the building the superintendent of schools spoke of the appointment of a woman to the principalship of a grammar school in Cambridge as an innovation. "This change," he said, "in what has seemed to be the settled policy of the city was a surprise, and yet it comes as naturally as the harvest follows the sowing. The fact is, the trend of public sentiment for the past twenty-five years has been in the direction of giving to woman any position to which she aspires; and so well has she filled the places she has occupied that it would be no more surprising, at some future day, for an Alice Freeman to be president of Harvard University than it now is for a woman to be principal of the Morse school. Is it desirable to have all the places in our schools now held by men given to women? No. On the contrary, I believe it would be for the fuller development of the child to have the number of men and women more nearly equal. I can see no reason why, in this school, a part of the assistant teachers should not be men. Were my daughter a student at Wellesley, I should prefer that in the corps of teachers there should be men as well as women; and had I a son at Harvard, I should be glad to have him feel the influence not only of the noble men who are teachers there, but also of the noble women who are qualified for such positions. I do not expect my views will change the policy of Wellesley or Harvard, but I doubt not the time will come when a larger proportion of the teachers in the public schools will be men, and that the more responsible positions now generally filled by men will be shared with women."

THE WELLINGTON SCHOOL HOUSE.

The Wellington school-house originally contained seven school-rooms. It was built in 1884 at a cost of $18,000; the land was owned by the city. During the past year it has been enlarged at a cost of $22,000. The building now contains thirteen school-rooms, several recitation-rooms, an assembly hall, and the usual conveniences of cloak-rooms, store-rooms, and closets found in modern school-houses.

FIFTY YEARS OF SERVICE.

PREPARED BY JOHN W. FREESE, MASTER OF THE WASHINGTON SCHOOL.

On the occasion of the retirement of Miss Adeline M. Ireson from the profession of teaching, after an experience of fifty years of successful work, a public testimonial in honor of her long and faithful service was given in Sanders Theatre on the evening of July 1, 1892.

The presentation exercises were opened by the master of the Washington school, in a brief speech assuring Miss Ireson of the high esteem and kind regard of both teachers and pupils, and expressing on his own and their behalf the wish that, in her retirement, she might find a happy serenity commensurate with her long and faithful labors as a teacher.

He then introduced Professor Albert Bushnell Hart, the committee in charge of the school, who in turn presented the superintendent of schools, Francis Cogswell, who spoke as follows: —

My acquaintance with Miss Ireson began not fifty years ago, but nearly forty. I came to Cambridge in 1854, having been appointed master of the Putnam school. Before entering upon my work, at the request of a member of the school committee, I visited the Washington school, then under the charge of Mr. Daniel Mansfield. No reason was given for making this request, but after visiting the school I understood why it was made — the committee-man would show me in the most effective way the quality of the work I was expected to do. At that time Miss Ireson was not a teacher in the Washington grammar school, but taught a middle school in the same building. Her teaching, however, affected the standing of the grammar school not less than when years later the middle and grammar schools were united.

Of Miss Ireson's work during the past eighteen years I have personal knowledge, and I wish to say to her in the presence of her friends and pupils, " Well done, good and faithful teacher."

Miss Ireson, it must be a great satisfaction to you to see so many of your former pupils here to-night, and know of the high esteem in which you are held. Think how many have become a blessing to themselves and to others. Nor is this all. Remember that no one knows the full measure of his influence. In my own experience the two teachers who exerted upon me the strongest influence for good never knew that I was anywise affected by them. Even now I find myself influenced in the selection of teachers by the memory of the sweet voice and gentle ways of one of them, a teacher of a primary school. The other was a preceptor in a New England academy. Were I a painter I could place on canvass his thoughtful face, for it has been as distinctly before me down through the years, as when I looked upon it as his pupil; and all my thoughts of him have made me feel that "Life is real, life is earnest."

Miss Ireson, as the years roll on—the endless years—this picture will grow brighter and brighter, and you will learn what it is so hard to realize here, that no faithful service is ever lost or fails of its reward.

Governor Russell, at one time a pupil of Miss Ireson, had been expected to take an important part in the exercises, but as imperative engagements prevented his coming, Mrs. Ellen A. Goodwin, of the school committee, read two letters from him, as follows:—

Professor A. B. Hart. My Dear Sir,—I find very much to my regret that I shall not be able in all probability to be in Cambridge on the evening of July 1 to attend the exercises of the Washington grammar school, whose interests are very dear to me, especially because of my early associations with it. Please express my regret at being absent; also express to my old friend and teacher, Miss Ireson, my congratulations on her fifty years of most useful and honorable work, my thanks, as one of her pupils for her influence and guidance, and my earnest hope that God may give her long life and prosperity. Very truly yours,

William E. Russell.

Dear Miss Ireson: It is with the greatest possible regret that I find that I cannot get to the exercises to-night. I should love dearly to be there, and, in presenting to you the testimonial which you have so well earned, express my appreciation of your very faithful services, and my gratitude to you for your kindness and assistance to me in my boyhood days. I never shall forget the patience, the ability, and interest of my old teacher, nor shall I forget how much I owe to her for any success that has come to me in later life. With kind regards I am sincerely,

William E. Russell.

Letters were also read from Mr. E. S. Dixwell, for many years head master of the Latin school, Boston, and from Mrs. Alice Freeman Palmer.

The reading of letters occupied the place in the programme that had been assigned to the governor. Prof. Hart of the school committee then presented Miss Ireson with the valuable testimonial on behalf of her many friends. The following is a portion of Prof. Hart's speech :—

That it has fallen to my lot to make this presentation is due to no desert, but to the unavoidable absence of others who would have been glad to enjoy that dignity. The governor of the Commonwealth, as he informs you in the letters that have just been read, had hoped to pay this tribute. The mayor of the city would have taken this place but for another imperative engagement; and our venerable Dr. Peabody would have been the worthy spokesman of the occasion had he not been on the point of leaving town. I am the spokesman of more than one hundred of Miss Ireson's friends and neighbors in Cambridge and elsewhere who have wished to express their appreciation of her lifelong work. A list of all the subscribers to the testimonial will in due time be sent her. It includes men and women, business men, artisans, and fellow-teachers, high officials of the city government, the president of the university, and the governor of the Commonwealth. It includes especially many old pupils who gratefully remember their study with Miss Ireson.

I offer you this tribute, Miss Ireson, because of the quiet self-respecting life which you have passed in this community, a lesson to your scholars and to us all. I offer it because of your patience during fifty years. Some of the little people in the audience think a day's school life a long time. What would they think of ten thousand days of school? But ten thousand times has Miss Ireson gone through her daily duty. I offer this, Miss Ireson, because of the interest in your pupils to which the letters which have been read testify, and which is as active now as at any time during the fifty years. When, some months ago, you came to say that you had made up your mind to resign from the Cambrige schools, I replied that Cambridge had no desire to lose your services.

It gives me great pleasure to offer in the name of your pupils and friends this document, an annuity entitling you to the sum of $129 yearly during the remainder of your life. The paper lies upon a silver salver, bearing the following inscription: "Presented to Adeline M. Ireson, by her former pupils and other friends, in grateful recognition of her Fifty Years of faithful service in the Washington School, Cambridge, July 1, 1892."

The gift itself is the lesser part and the part which you will value the least, for with these tangible evidences go the good will of your many friends and the respect of the community which for fifty years you have served so faithfully.

In accepting the gift Miss Ireson said :—

Friends and former pupils : I sincerely thank you for the beautiful and valuable gifts which you have bestowed upon me. They will make life easier for me in my retirement and be a constant reminder to me of your generosity. Nor is it for their value alone that I prize them, but the names of the donors, the names appended to the circular, are of themselves a testimonial of which any one ought to be proud. I have never realized so fully before my unworthiness of the honor you have done me. The wise man says, "Let not him that putteth on the harness boast as he that putteth it off." But as one drops the harness, who has any high standard of duty, and realizes the immense power for good in the opportunity of influencing so many young and plastic minds, he can but be very humble in view of the small results accomplished. True, I have given the best of my life and strength to the work, but I have had a genuine love for it and thoroughly enjoyed it, and only wish that I were ten years younger that I might continue in it. I recall many of my pupils who have filled and are filling honorable positions in the world, and as I hear of them from time to time I wonder whether my influence has been any factor in their success. I well remember the fair-haired, full-browed boy with his clear voice and prompt answers, and am proud to have had a small share in the education of one who has so admirably filled the highest offices in the city, the state, and I had almost said, in the land, — but that will come later. (Applause.)

Allow me to thank our honored superintendent and committee for their consideration and their constant support, and especially for the interest and earnestness they have manifested in giving me this recognition of my services. The recollection of it will go with me through life, and give others confidence to feel that their work is appreciated.

Brief remarks by the Rev. Dr. McKenzie concluded these interesting exercises.

THE PORTRAIT OF DR. PEABODY.

AN ACCOUNT OF THE PRESENTATION EXERCISES AT THE PEABODY SCHOOL, JAN. 27, 1893, BY FREDERICK S. CUTTER, MASTER OF THE SCHOOL.

An interesting event in the history of the Peabody grammar school was the presentation of an oil portrait of the Rev. Andrew P. Peabody, D. D., in whose honor the school was named. It was originally intended that the portrait should be the gift of the friends of the school, and Dr. Peabody was asked to sit for it in accordance with this plan. In consenting to do this, however, he added that the picture must be his gift to the school. The generous offer was gratefully accepted. The picture is a life-size, half-length portrait, and was painted by Mr. E. T. Billings, of Boston.

The presentation exercises took place at the school-house, January 27, 1893. There were present Dr. Peabody and two of his daughters, His Honor Mayor Bancroft, members of the school board, and other distinguished guests. The exercises consisted of singing by the pupils and addresses by several of the guests. The following report contains extracts from each of the addresses.

In his introductory remarks the master of the school explained the way in which the valuable gift had come to the school, and then added:

> The portrait in its elegant frame is a gift for which we all are deeply grateful, and in behalf of the Peabody school I desire to thank the generous donor. I believe that the countenance of one whose words and example have done so much to lead others into a Christian faith and religious life, will ever be a source of inspiration to the teachers and pupils of this school.
>
> There is to me in this occasion an added interest: this is the portrait of my teacher and college pastor. I have forgotten some of his words

of instruction, but I can never lose the influence he imparted. May the influence of his character, as revealed in the expression which the artist has portrayed, be multiplied in its power in the lives of the many who shall enter and go forth from this school in the years that are to come.

Dr. Peabody was then introduced, and was received with much applause. He spoke as follows:

Never in my long speech-making life have I felt so much embarrassed as at this time. I am very glad if I have given pleasure to your teachers and to yourselves by this portrait. There is no place in which I would rather have my portrait hang than in a school-room. My father was a teacher, and I began teaching just after leaving college. I love the work of a teacher; it is the greatest work man can do. As a minister, I have felt that the teaching power is the greatest power one can possess. The clergyman is but a teacher in those highest arts by the aid of which man can go safely through this world and into the world beyond. The instruction given in the school-room is far-reaching in its influence.

He then expressed the great interest he felt in the Peabody school, and referred to the pleasant visits he had made. He spoke to the children of the characters they were forming, exhorting them to be such boys and girls as their own consciences would approve; and finally thanked them and the teachers for the warm reception they had given him.

His Honor Mayor Bancroft was then introduced, and in behalf of the city paid the following tribute to Dr. Peabody:

The city of Cambridge has occasion to feel a peculiar gratitude towards Dr. Peabody. To remember that for a dozen years he gave to the city his services as a member of the school board, is to remember a reason why our schools are excellent. His services meant that ripe scholarship and judgment, matured by experience, aided in the solution of the interesting but often difficult problems of popular education. Fitting indeed it was that his name should be given to this most beautiful hall of instruction. Through his own generous hand his face is to be preserved for the scholars here — a benediction it will ever be; for who of those to come, when they shall ask about him, but will learn something to inspire to higher and nobler effort. Scholars, I congratulate you upon your good fortune in receiving the gift you will prize so highly. Revere the man, as have your fathers. Revere the manhood of the man, as will your children.

And you, sir, full of years and of honors, I congratulate you too upon the part you bear. For many years you have been the pride of a city whose learning has been the pride of New England. Speaking for that city I may say that in the hearts of its citizens you never held a warmer place than you do to-day. May you long be spared to counsel the community which regards you with so much affection.

Mrs. Carolyn P. Chase, sub-committee now in charge of the school, said :

I shall take very little of your time, for to-day we all want to hear from those who have known Dr. Peabody long and intimately, and were connected with the school when it was named, and who chose its name. I am glad of an opportunity to congratulate the school on the possession of this treasure. I am sure that day by day and every day it will inspire and help us as we try, by faithfulness in duty, by courtesy to all, and by loyal service for God and Home and Native Land, to live up to the name we are proud to bear — the Peabody school.

The next speaker was Superintendent Francis Cogswell, who said :

Probably no person knows better than I how much the schools are indebted to Dr. Peabody. I do not refer to his work in connection with the high school, the training school for teachers, the meetings of the board, the public and private examinations, or in writing several of the school reports. I have in mind his personal influence as felt by teachers and pupils and parents and superintendent. I congratulate the master and the teachers of this school in having constantly before them the likeness of him whose presence is always a benediction.

Mr. Albert M. Barnes, ex-member of the school board, and the sub-committee under whom the Peabody school was organized, was next called upon. He spoke as follows :

It affords me a great deal of pleasure to be with you on this occasion, and to rejoice with you in the possession of this excellent portrait.

In choosing a name for this school, we were fortunate in the selection of one which, for a good many years, has been closely identified with educational matters in general, and the public schools of Cambridge in particular. It has been your good fortune to have with you, from time to time, the gentleman for whom the school was named, to cheer you with his kindly presence and to inspire you with his wise counsels ; so I know you will all join me in the hope that, for many years to come, the school may continue to count him as one of the regular attendants on all public occasions.

It is also your good fortune that, from this time on, you and those who follow you, will always have before you the likeness of your patron and namesake whenever you assemble here, and I am sure you will all look at this portrait with deep feelings of love and admiration.

I hope this portrait will inspire all who may sit in front of it with the desire to be good men and good women, an honor to themselves and to the Peabody school; and may all of you, who have had the pleasure of meeting the original, carry with you evermore the same pleasant recollections, and the same respect and esteem for him, that I am sure you all feel to-day.

Rev. Dr. McKenzie expressed his great pleasure in being present on an occasion of so much interest, and said that it was the first time he had ever wished that Dr. Peabody was in some other place; for he should like to talk of the man, and to tell of his admiration and affection for him:

If any one should ask why the portrait is in this building, it might be replied that the school bears his name. This would bring another question—Why does the school bear his name? It might be because he is a great scholar and teacher, and a maker of books, and an eminent preacher. In these things would be found sufficient reason for all that has been done. But the real reason is a deeper one and a better one. It is that Dr. Peabody is the man he is. It is his character, with all its grand qualities, to which this regard is shown. The scholars of the Peabody school need not expect a life which shall be altogether like his. Every one has his own life and his own works. But they can strive to have his virtues: to be industrious, faithful, generous, helpful, as he has been in his many years. The lessons of the school are to be well learned, the teaching of the school to be carefully remembered, for these are essential to the successful life which every one desires. The ability to spell a word, or do a sum, may determine the place one is to have in the world. This portrait, with its strong benignant face, will be a continual inspiration to the teachers who look upon it, and to the scholars a constant incentive to do their best and be their best.

This portrait is the work of an artist, but really it was the man himself who painted it. The boys and girls here will paint their own portraits; will make the expression which their face shall bear, and which can be put on the canvas. Day by day, year by year, they will be making the picture of themselves. They might very well decide how they would like to look when they are old, and then work out the design in their lives.

At the conclusion of the exercises, Dr. Peabody was presented with a large basket of roses, the gift of the teachers and pupils of the school. The reception of the portrait, the presence and words of Dr. Peabody, and the tributes that were offered, together made an occasion that will be long and pleasantly remembered by the teachers and pupils, and the friends who were present.

On the first of February, five days after the presentation of his portrait, Dr. Peabody had a serious fall by which he was confined to his room for several weeks. While thus confined he was taken ill with pneumonia, from which he died March 10, 1893. Upon the announcement of his death, the Peabody school was closed for the day, and also upon the day of his burial. At the funeral services the school was represented by the sub-committee, the teachers, and four of the pupils.

At a meeting of the School Committee, held March 16, the following resolutions were unanimously adopted by a rising vote:

"*Whereas*, it has pleased God to remove from this community one of its most respected and most beloved citizens, the Rev. Dr. Andrew P. Peabody, and

"*Whereas*, Dr. Peabody served this community faithfully and most effectively for twelve years as a member of the School Committee and, until the time of his death, never ceased to manifest his interest in education and especially in the schools of this city, one of which is honored with his name, therefore

"*Resolved*, That the School Committee of Cambridge hereby record their sense of obligation and of loss; that they remember with grateful appreciation Dr. Peabody's devoted and invaluable service to the profession of teaching which he loved and honored, and to the welfare of childhood and youth which was ever near to his heart.

"*Resolved*, That the force of his example is a fresh incentive to this Committee to endeavor to make the public schools of the city a nursery of those sterling qualities of truthfulness, fearlessness, and simplicity, and of those softer graces of gentleness, kindliness, and charity which distinguished him."

THE AUTHORITY OF THE SCHOOL COMMITTEE.

By the recent decision of the Supreme Judicial Court for the Commonwealth, in the case of John A. Watson against the city of Cambridge, it has again been affirmed that the school committee has authority, not subject to revision in the courts, to exclude from a public school a pupil whose presence is an injury to its discipline.

John A. Watson was excluded from the Cambridge schools by the committee on the grounds that he was too feeble-minded to attend school. He brought a suit against the city, and in the Superior Court recovered a verdict. The city took exceptions to the refusal of the judge to give certain rulings which were asked for by the counsel for the city, and which, if given, would have prevented Watson from recovering. The case went to the law court, where the exceptions were sustained. The opinion of the full court is as follows:—

"The records of the school committee of the defendant city set forth that the plaintiff in 1885 was excluded from the schools 'because he was too weak-minded to derive profit from instruction.' He was afterward taken again on trial for two weeks, and at the end of that time again excluded. The records further recite that 'it appears from the statements of teachers who observed him, and from certificates of physicians, that he is so weak in mind as not to derive any marked benefit from instruction, and further that he is troublesome to other children, making unusual noises, pinching others, etc. He is also found unable to take ordinary decent physical care of himself.' The evidence at the trial tended strongly to show that the matters set out in the records were true.

"The defendant requested the court to rule that if the facts were true which are set forth in the records of the committee as to the cause of the exclusion of the plaintiff from the public schools, the determination of the school committee thereon, acting in good faith, was final and not subject to revision in the courts. The court refused so to rule, and submitted to the jury the question whether the facts stated, if proved, showed that the plaintiff's presence in school was a serious disturbance to the good order and discipline of the school.

"The exceptions present the question whether the decision of the school committee of a city or town acting in good faith in the management of the schools, upon matters of fact directly affecting the good order and discipline of the schools, is final so far as it relates to the rights of pupils to enjoy the privileges of the school, or is subject to revision by a court. In Hodgkins *vs.* Rockort, 105 Mass., 475, it appeared that the school committee, acting in good faith, excluded the plaintiff from school on account 'of his general persistence in disobeying the rules of the school to the injury of the school.' Of the plaintiff's acts of misconduct it is said, in the opinion in that case, that whether they had such an effect upon the welfare of the school as to require his expulsion was a question within the discretion of the committee, and upon which their action is conclusive.'

"The principles there laid down are decisive of the present case. It was found by the presiding justice that the alleged misconduct of the plaintiff in that case was not mutinous or gross, and did not consist of a refusal to obey the commands of the teachers, or of any outrageous proceeding, but of acts of neglect, carelessness of posture in his seat and recitation, tricks of playfulness, inattention to the regulations of the school in minor matters. The only difference between the acts of disorder in that case and in this is that in this they resulted from the incapacity and mental weakness of the plaintiff, and in the other they were wilful or careless — the result in part of youthful exuberance of spirits and impatience of restraint or control. In their general effect upon the school they were alike, and the reasons for giving the school committee, acting in good faith, the power to decide finally a question affecting so vitally the rights and interests of all the other scholars of the school, are the same in both cases.

"Under the law the school committee 'have the general charge and superintendence of all the public schools in the town or city.' Public Statutes, ch. 44, sect. 21. The management of the schools involves many details, and it is important that a board of public officers, dealing with these details and having jurisdiction to regulate the internal affairs of the school, should not be interfered with or have their conduct called in question before another tribunal so long as they act in good faith within their jurisdiction. Whether certain acts of disorder so seriously interfere with the school that one who persists in them either voluntarily or by reason of imbecility, should not be permitted to continue in the school, is a question which the statute makes it their duty to answer, and if they answer honestly in an effort to do their duty, a jury composed of men of no special fitness to decide educational questions should not be permitted to say that their answer is wrong. Spear *vs.* Cumming, 23, Pick., 224. 226.

"We are of the opinion that the ruling requested should have been given. Exceptions sustained."

AIDS IN SCHOOL GOVERNMENT.

The present rule of the school board in regard to discipline, adopted more than twenty years ago, is as follows:

> It is enjoined on the teachers to exercise vigilant, prudent, and firm discipline, and to govern by persuasion and gentle measures as far as possible. No pupil shall be kept after the morning session more than fifteen minutes, or after the afternoon session more than half an hour. No pupil entering school shall be subject to corporal punishment in any form. But, if a pupil prove to be disorderly or refractory, such pupil shall be liable to corporal punishment during the remainder of the term, the written consent of the committee in charge of the school having been first obtained, and due notice to the parent or guardian having been given by the principal.
>
> Any teacher may suspend a pupil from school for violation of the school regulations or the rules of the school, or for any other sufficient cause; but he shall immediately report the case to the parent or guardian of such pupil and to the committee in charge of the school or to the superintendent, with a written statement of the cause of such suspension.

The following forms of letters, printed on half sheets of note paper, are used as one means of securing the coöperation of parents in the work of the schools. For convenience in referring to them, the letters are marked by *stars*. In printing them here they are *numbered*.

Letter No. 1.

....................SCHOOL,........................189 .

MR. ... .

........................deportment at school is not satisfactory.

I think it best to inform you of the fact, and hope..........will do better in the future.

More definite information may be obtained of me at room No. ....

Respectfully,

.............................Teacher.

To aid in maintaining good order, please sign and return this.

Place for signing. ....

Letter No. 2.

.... SCHOOL, ... 189 .

MR. ....

.... deportment continues unsatisfactory.

When .... returns I should like to have you, or some suitable person, accompany .... as an interview seems desirable.

Respectfully,

.... Teacher.

Room No. ....

Letter No. 3.

.... SCHOOL, ... 189 .

MR. ....

.... deportment still continues unsatisfactory.

Before .... returns it will be necessary for you, or some suitable person, to see me, or some one having charge of the school.

Respectfully,

.... Teacher.

Room No. ....

Letter No. 4.

.... SCHOOL, ... 189 .

MR. ....

.... lessons have not been prepared to my satisfaction.

I think it best to inform you of the fact, that the influence of home may be added to that of the teacher, to the end that closer attention may be given to the work of school, unless there are circumstances in the case which render it undesirable.

Respectfully,

.... Teacher.

Please sign and return this.

Place for signing. ....

Letter No. 5.

.... SCHOOL, ... 189 .

MR. ....

The following in reference to the suspension of pupils is copied from the school regulations:

"Any teacher may suspend a pupil from school for violation of the school regulations or the rules of the school, or for any other sufficient cause; but he shall immediately report the case to the parent or guardian of such pupil, and to the committee in charge of the school or to the superintendent, with a written statement of the cause of such suspension."

In compliance with this regulation, I notify you that

....

has been suspended from school for ....

Respectfully,

.... Teacher.

This case will be reported to

.... { Sub-Committee of the School. } or to .... { Superintendent of Schools. }

Letter No. 6.

....................School,...............189 .

Mr..............................

Your attention is called to the following regulation of the school committee with reference to the absence and tardiness of pupils:

"Every pupil not present in the school-room at the time appointed for opening the session of the schools shall be recorded as absent unless he is present during some part of that session, in which case he shall be recorded as tardy. Any pupil not having a satisfactory excuse for either absence or tardiness may be required to bring from the committee in charge of the school or the superintendent a written permit to return to school."

You are earnestly requested to coöperate with me in efforts to secure prompt and regular attendance as far as practicable.

Respectfully,

..............................Teacher.

Please sign and return this paper.

Place for signing. ....

Letter No. 7.

Mr..................................

The following in reference to the absence and tardiness of pupils is copied from the school regulations:

"Every pupil not present in the school-room at the time appointed for opening the session of the schools shall be recorded as absent unless he is present during some part of that session, in which case he shall be recorded as tardy. Any pupil not having a satisfactory excuse for either absence or tardiness may be required to bring from the committee in charge of the school or the superintendent a written permit to return to school."

....record is as follows:

Absent during the past.......weeks........half days.

Tardy during the past........weeks........times.

Application for permission to return to school should now be made to

.... Sub-Committee of the School. or to.................... Superintendent of Schools.

Respectfully,

..........................Teacher.

If the application is granted, it will be sufficient for the one designated to write his name on the line below.

....

....................................189 .

The statute under which pupils can be dealt with who absent themselves from school and become habitual truants, or who persistently violate the reasonable rules and regulations of the schools, is as follows: —

"Each town shall make all needful provisions and arrangements concerning habitual truants and children between seven and fifteen years of age who may be found wandering about in the streets or public places therein, having no lawful occupation or business, not attending school, and growing up in ignorance, *and such children as persistently violate the reasonable rules and regulations of the common schools*, and shall make such by-laws as shall be most conducive to the welfare of such children, and to the good order of such town; and shall provide suitable places for the confinement, discipline, and instruction of such children.

"Any minor convicted under a by-law made under section ten of being an habitual truant, or of wandering about in the streets and places of a city or town, having no lawful employment or business, not attending school, and growing up in ignorance, *or of persistently violating the rules and regulations of the common schools*, shall be committed to any institution of instruction, or suitable institution provided for the purpose, under the authority of said section or by-law, for a term not exceeding two years."

During the past two years several boys have been sentenced by the district court to the truant school for persistently disobeying the rules of the schools, and the effect of this action on other pupils has been salutary.

SELECTIONS FROM FORMER REPORTS.

CO-EDUCATION OF THE SEXES.

[From the report for 1851.*]

The people of Cambridge look upon the high school with favor and laudable pride; and it is often referred to by citizens of other towns as a model worthy of imitation. Distinguished foreigners, visiting the United States to make themselves acquainted with our system of public education, have examined with interest and approbation the details of our high school system, and have watched its operations with care. It binds together the parts of the complicated system of our public schools, which has been matured by the experience, forethought, personal labors, and anxious cares of committees and teachers through a series of years; and it is intended to finish the work, begun in the local schools of different grades, by furnishing a higher education to all the youth of both sexes who have qualified themselves to pass the examinations and are desirous to enter upon its studies. This is one of its peculiarities. It is founded on the idea that girls are equally entitled with boys to the benefits of literary and even scientific culture. The object that we have aimed to accomplish is to train up both sexes equally. We have not noticed, in our observation and experience of life, that the Creator has less bountifully endowed one-half of his rational children than he has the other. Their character, tendencies, tastes, affections, are different; but both are alike intellectual and moral; both alike require the development of their faculties; both alike are permitted to enjoy the pleasures of literary culture, and to comprehend the greatest truths of science; both alike, in after life, have constant occasions to use all the knowledge they possess, and to task all the strength of the reasoning faculties they have received from nature or acquired by education — each in their appropriate sphere — and both are alike exposed to the evils of ignorance and the impostures of knavery. They are destined to pass through life together; having the same interests, with common sources of happiness, common duties, common hopes, both for this world and the next. It is the plainest dictate of good sense that they should be educated alike, so far as education is a general preparation for specific duties, in the various careers of life. Observation in the schools has constantly shown, that whether in literature or science, whether in language or mathematics, the girls are fully equal in capacity to the boys; and, if the reports of our committees are to be trusted, they are in many things their superiors. We may flatter ourselves that this is owing to the earlier growth and maturity of the female mind. If so, it is another reason why their minds, during the rapidly forming period of youth, should have the full benefit of the best education we can give them. It has further been found advantageous to both sexes to be educated together. There is a natural and most beneficial influence mutually exercised, like that between brothers and sisters in the family circle. They learn to appreciate and respect each other, and the tone of manners on both sides is made purer and more refined by this beneficial intercourse. Candor, however, must admit that the chief benefit is received by the boys; their ruder natures more need the softening and refining process than the gentle and delicate natures of girls. 'A boy' says a German writer, 'is a little barbarian, out of whom a man is to be formed.' This was written in a country where the sexes are wholly separated during the period of their education. The expression is strong, but it has a basis of truth; and there is nothing so well suited to cure a boy of his native barbarism as the influence of the other sex, exerted not only by their daily presence, but by their sharing in the same intellectual pursuits.

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*It appears that in 1845 there was opposition to having boys and girls of high school age attend the same school.

The experience of our public schools has settled the question, so far as the youth of this city are concerned, as to the desirableness of bringing the sexes together within the sphere of each other's natural influence, in all the stages of our public education. This association and equality in studies is one of the characteristics that have struck foreigners most strangely; a common objection to it has been that it must unfit the girls for the domestic duties in which their lives are to be spent. But there is a general principle to be laid down in education; that the best educated man will best discharge every duty; and it is absurd not to extend a law of human life to the better half of the human family; the completion of the rule is, the best educated woman will best discharge every duty that may devolve upon her in domestic life. A woman will govern her household none the worse for knowing history, mathematics, languages well. She will preside over the social circle none the less gracefully for being able to take an intelligent share in literary, scientific, or generally intellectual conversation. She will direct her cook how to roast, or boil, or bake; how to combine the elements of a pudding, or blend into mysterious harmony the multiform ingredients of a pie, none the less skilfully for knowing how to work a problem in Euclid or scan a line in Virgil. This is not a conclusion of theory, but a fact of experience. The citizens of Cambridge, therefore, have wisely resolved that their daughters shall be educated as well as their sons; and their daughters with equal wisdom, have resolved to turn the opportunity to the best account.

MORAL TRAINING.

[From the report of 1861.]

It is in vain to expect much from the school, when the home training has been neglected. It is true only in a narrow and technical sense that the teacher is in the place of the parent. For all that makes character, as well as for all the amenities of manners, the home is the school ordained of God, and the parent can delegate his trust to no other. When this has been neglected, the school may indeed offer some check to the development of bad tendencies, but it will not be a permanent one. There is no natural affection to enforce the appeal, no sacred charm, such as invests the thought of home, to stimulate to strong endeavor. Where centres a child's love, is the best atmosphere for the tender growth of the moral sentiments. From the lips that God has made seem almost infallible to the child's apprehension, will best come the precepts that are to guide his life. In all that respects moral and religious culture, therefore, the school must be secondary and auxiliary to the home; and how easy and delightful the teacher's task, where respect and trust have become habitual, obedience a second nature, and all the home-bred virtues of well-trained childhood, shining in the features and manners, give surest evidence of parental care and wisdom. The child who has thus been carefully nurtured at home is an acquisition to any school, for, unconsciously, he is the teacher's best ally. It is example confirming precept.

But has the school, has the teacher no responsibility for the *moral culture* of his pupils? Are his duties exhausted with text-book instruction? I think that, while he will consider it the chief *object* of the school to give instruction in the various branches of study, he ought also to remember that moral and religious culture are the higher parts of education, and that, though the home is their appropriate school, it is his duty to aid the home training in these respects with all the means in his power. What appliances can he use? In the first place, the intellectual discipline is in itself an aid to moral culture; for the moral and intellectual parts of our nature are so intimately connected, thoughts and sentiments are so combined, that the growth of one must affect the other. Besides, there are often opportunities furnished by the lessons of the day to to suggest a useful moral; as the character and conduct of some person in history, a passage in an author studied, or a single word charged with moral meaning. A class will listen much more readily to familiar talk excited in such a way, than to any formal discourse. But the latter may be well employed on suitable occasions, as when some serious misdemeanor has been brought to the notice of the whole school, or when some important rule has to be enforced, or when some unusual event breaks the ordinary course of school life. The teacher can easily pass from the particular occasion which has excited remark to a wider application.

But by far the most powerful means which a teacher, or any one else who wishes to influence others, can use, is example. Without it precept is powerless. The teacher must himself be what he urges upon his pupil. How unfortunate for him and his charge, if his careless conduct, or hasty speech, or prejudice, or lack of sympthy with youthful feeling, turn the edge of all his counsels and make them of no effect.

The theory of our public schools does not include much in the way of direct religious instruction. But some influence they must have, either religious or the reverse. Not merely on the ground of justice to the parents, but also on moral grounds connected with the child's character, I believe that the faith of a child in the religious ideas in which he has been educated should never be weakened or suspicion thrown upon them. However useful free inquiry, self-prompted and honest, may be to him when he comes to maturity, in childhood, at least, any loosening of religious opinions by others would be in the highest degree dangerous; for the morality of a child is so directly built on his religious belief, that any shock given to the one would surely injure the other. Hence I think the religious bias given at home should not be interfered with at school or anywhere else. But the religious *spirit* developed at home may certainly be fostered at school. The first, best lessons of religion, reverence and love, may be impressed upon the heart; not so much by direct instruction — for that which appeals to the sentiments can never be a proper object of instruction — as by general influences, tending to awaken whatever there may be of natural susceptibility to such impressions. As plants depend for half their life on unseen elements in the air, so in the moral atmosphere invisible and subtle agencies are ever at work to elevate or debase. Here are needed the sharpest observation and the finest analysis. He who can command the elements of this atmosphere, though he seem not to utter a word, will most successfully teach the great lessons of religion and all the finer graces of a virtuous character.

A TEACHERS' INSTITUTE.

On the thirteenth of December a teachers' institute for the Cambridge teachers was held in the English high school building, under the direction of the State Board of Education. The exercises were of unusual interest. The speakers had the undivided attention of the teachers, and at the close there was but one expression—"A profitable day!"

PROGRAM.

9.00 A. M.—Principles of Teaching.
JOHN W. DICKINSON

10.00 A. M. Arithmetic, *Primary Section.*
GEORGE A. WALTON

Nature Studies, *Grammar Section.*
ARTHUR C. BOYDEN

11.00 A. M.—Arithmetic, *Grammar Section,*
MR. WALTON

Nature Studies. *Primary Section*
MR. BOYDEN

1.30 P. M.—Drawing . . . . . . HENRY T. BAILEY

2.30 P. M.—Language . . . . GEORGE I. ALDRICH

3.30 P. M.—Physiology and Hygiene . MR. BOYDEN

John W. Dickinson,
Secretary of the State Board of Education.

RECENT GIFTS TO THE SCHOOLS.

An account of the gifts of Mr. Rindge has already been given in connection with that of the manual training school. Within the past two years other gifts have been received. Mr. Morse has given to the school which bears his name a library of four hundred twenty-five volumes for the use of the pupils; a teachers' library of more than two hundred volumes; a choice selection of pictures numbering nearly one hundred; several pieces of statuary; a piano, a carpet, bookcases, and other furniture for the library-room; flags for the school-rooms; a flagstaff and a flag for the building.

During the past year Mr. Alfred C. Fuller, son of the Hon. Robert O. Fuller, has given, principally to the grammar schools, his private collection of nearly three hundred pictures. The spirit which led Mr. Fuller to leave his native land and go to India to enter upon missionary work prompted him, in distributing the pictures, to send some of the choicest of them to the schools where the pupils are the least favored in their home surroundings.

Gifts have also been received from Mr. John Hopewell, Jr., William A. Munroe, Esq., Houghton, Mifflin, & Co., Mr. George P. Johnson, Mrs. Ellen A. Goodwin, and several of the graduating classes.

These gifts are of great educational value. They are not only excellent subjects for language lessons, but their silent influence is elevating and refining. No pupil wisely directed can be surrounded by books and pictures, collections of minerals and other objects of interest, without being stimulated in his work and becoming cultivated in taste.

A list of these gifts, prepared by the teachers of the respective schools, is given below. The list is printed for two reasons: first, that a permanent record of these gifts may be made; and second, that others, not only in our own city but elsewhere, may be prompted to remember the schools in a similar way.

GIFTS OF MR. MORSE TO THE MORSE SCHOOL.

PORTRAITS.

Dante. A photograph from the famous portrait by Giotto, in the National Museum, Florence.

Shakespeare	Photograph	
Tennyson	Engraving	
Scott	Photograph from an old portrait	
Lincoln	Engraving from Sargent's portrait	
Washington	(2) Lithographs	
Agassiz	(2) Lithographs	
Bryant	Houghton, Mifflin and Co.	Life size
Emerson	Houghton, Mifflin and Co.	Life size
Hawthorne	Houghton, Mifflin and Co.	Life size
Longfellow	(2) Houghton, Mifflin and Co.	Life size
Lowell	(2) Houghton, Mifflin and Co.	Life size
Holmes	Houghton, Mifflin and Co.	Life size
Whittier	Houghton, Mifflin and Co.	Life size

VIEWS.

Roman Forum	Photograph, 6ft. x 3 ft.
Acropolis, Athens	Photograph, 6ft x 4 ft.
The Jungfrau and Interlachen	Carbon photograph, 4 ft. x 3ft
Section of Parthenon Frieze,	Water Carriers, Photograph, 4ft. x 3 ft.
Arch of Titus, Rome	Carbon photograph, 4ft. x 3ft.
Sphinx and Pyramids, Egypt	Carbon photograph
Statue of Gen. Colleoni, Venice A famous equestrian statue by Verocchio.	Photograph, 4 ft. x 3 ft.
Pharaoh's Bed	Nile view, photograph, 4 ft. x 3 ft.
Pike's Peak from the Garden of the Gods	Colored photograph
Temple of Vesta, Rome	Photograph
Castle of St. Angelo and St. Peter's	Photograph
Bridge of Sighs, Venice	Photograph
Parthenon, Athens	Photograph
Westminster Abbey	Large etching
Castle of Chillon	Photograph
Lake Leman	Colored photograph
Niagara Falls	Photograph
Court of Doge's Palace, Venice	Colored photograph
The Rialto, Venice	Colored photograph
Grand Canal, Venice	Colored photograph
Quay and Gondola, Venice	Colored photograph

St. Mark's, Venice	Colored photograph
Leaning Tower, Pisa	Photograph
Pantheon of Agrippa, Rome.	Water color
Built about 27 B. C., contains the tomb of Raphael.	
Poet's Corner, Westminster Abbey.	Etching
" Where Shakespeare Sleeps."	Etching
A beautiful view of the Church at Stratford.	
Chapel of William Tell	Large photogravure
Warwick Castle.	
Summit of Mt. Washington and Railway	Photograph
Bunker Hill Monument	Photograph
National Monument, Plymouth, Mass.	Photograph

BRAUN'S CARBON AND OTHER FOREIGN PHOTOGRAPHS FROM PAINTINGS BY THE OLD MASTERS.

Marriage of St. Catherine	Correggio
Louvre, Paris.	
River Harbor	Claude Lorraine
Hermitage, St. Petersburg.	
Divine Shepherd	Murillo
Prado, Madrid.	
Infant St. John	Murillo
Prado, Madrid.	
Immaculate Conception	Murillo
Louvre, Paris.	
St. Cecilia	Raphael
Old Pinacothek, Munich.	
Sistine Madonna	Raphael
Dresden Gallery.	
Madonna of the Chair	Raphael
Pitti Gallery, Florence.	
Angel with Lute	Fra Bartolommeo
Pitti Gallery, Florence.	
Children of Charles I.	Van Dyck
Rijks Museum, Amsterdam.	
Age of Innocence	Sir Joshua Reynolds
National Gallery, London.	
Shepherdess	J. F. Millet
Louvre, Paris.	

SUBJECTS CLASSICAL, RELIGIOUS, HISTORICAL, ETC.

Aurora. From the painting by Guido Reni

Columbus at the Court of Isabella. A large photogravure from Brozik's painting.

The Building of the Pyramids. Photograph, 4½ft. x 3ft. From painting by Gustav Richter, Berlin.

The Night Watch. Large engraving
Ruins of Persepolis by moonlight.
Washington Crossing the Delaware. 4½ ft. x 3 ft. Engraved from painting by E. Leutze.
The Angelus. A fine etching of Millet's famous painting.
Napoleon, 1814. From painting by Meissonier
Boston Boys and Gen. Gage, 1775. From painting by Henry Bacon.
The Puritan Sabbath. Large etching
Return of the Mayflower. From painting by Boughton
Pilgrim Exiles. From painting by Boughton
Roman Chariot Race. Large etching. Deville
St. Michael's Mount. From painting by R. M. Lloyd
Return of the Oyster Fishers. Etching
End of the Harvest. Large etching
Morning Greeting. Farm scene.
Sistine Madonna, Raphael. Large engraving
Madonna of the Chair. Very large. A reproduction in color of one of Raphael's loveliest Madonnas.
Christ and the Rich Young Man. Hoffman. A large and beautiful photograph reproducing the exquisite colors of the original.
La Poesie. A large engraving from the painting by Coomans.
The Last Prayer. Christian persecutions. From painting by Gerome
Angel Choir. Sir Joshua Reynolds. Photograph
Pharaoh's Horses. Sir Joshua Reynolds. Photograph
The Ferryman's Child.
English Farmhouse.
Golden Leaves. Autumn scene. J. E. Grace.
Boy Christ in the Temple. Photograph from Hoffman's painting.
Vesuvius in Eruption. (1872.)
Mary, the Mother of Washington. Portrait. India proof.

STATUARY.

Busts, Antique.

Eros, called the Genius of the Vatican. (Life size.) Found in the 18th century in ruins near Rome.
Hermes, (Olympian.) By Praxiteles. One of the best specimens of Greek art.
Psyche of Naples. Naples Museum. (Life size.) Found about the middle of the last century in the ruins of the Roman Amphitheatre at Capua.
Faun. By Praxiteles, the "Marble Faun" of Hawthorne; found 1701, near Rome, and placed in the Capitoline Museum. (Life size.)
Minerva of the Vatican. (Statue.) Found in the Temple of Minerva Medica, on the Esquiline, Rome.
Infant St. John. Donatello.
Laughing Boy. Donatello.

Mercury, Thorwaldsen. (Small terra cotta.)
Boys and Girls Singing and Playing on Musical Instruments. Two high relief panels from frieze of organ screen in the Duomo, Florence, by Luca della Robbia.
Mother and Child. (Medallion.) From the monument of Filippo Strozzi, Florence.

Modern Busts. (Life size.)

Washington.
Scott.
Agassiz.

OTHER GIFTS TO THE SCHOOL FROM MR. MORSE.

Pupils' library. 425 volumes.
Teachers' library. 212 volumes.
Piano.
Natural History Case.
Bookcase for Pupils' Library.
Bookcase for Teachers' Library.
Carpet, and Table for Library-room.
Flags for the Schoolrooms.
Flagstaff and Flag for the Building.

GIFTS TO THE MORSE SCHOOL FROM OTHER FRIENDS.

Bust of Franklin. Presented by Mr. Alfred C. Fuller.
Cabinet of Minerals. Presented by Mr. Alfred C. Fuller.
Bust of Shakespeare. Presented by the class of '92.
General View of Paris. Large engraving. Presented by Mr. John Hopewell, Jr.
General View of London. Large engraving. Presented by Mr. John Hopewell, Jr.
Fusiyama, Japan. Colored photograph. Presented by William A. Munroe, Esq.
Lion. Large photograph from life. Presented by William A. Munroe, Esq.

GIFTS OF MR. FULLER TO THE GRAMMAR SCHOOLS.

Agassiz School.

Old Steps at Capri	Photogravure
Blue Grotto at Capri	Colored print
Mosquito Trail, Rocky Mountains	Chromolithograph
Richmond Castle	Large etching
The Matterhorn	Photograph
Pied Piper of Hamelin. Part I.	Photogravure
German Game of Cards	Photograph

Clock, Piazza St. Mark	Colored photograph
Niagara in Winter	Photograph
Woods in Winter (Swiss scene)	Colored photograph

Allston School.

Westminster Abbey. A large etching, drawn by Howard Gaye, and etched by Delauney.

"List! Hear the pine trees whisper." An etching by Camillo Fonce, an artist's proof.

St. George's Square in London. Etching. Axel Haig.

A Summer's Eve. Lithograph after Wahlborg.

Bengal Tigers. An etching by Evert Van Muyden, an artist's proof.

Nelson's Flag Ship. The "Victory" at rest in Portsmouth Harbor. An etching drawn and etched by C. E. Holloway.

Edinburgh Castle. A large etching by C. O. Murray.

The Rookery. An etching by Fred Slocombe.

Les Cancalaises. Photogravure after M. Feyen-Perrin.

Declaration of Independence. A steel engraving by W. L. Ormsby, from a painting by I. Trumbull.

The Deer Pass. Photogravure after Landseer.

St. Mark's Cathedral, Venice. A colored photograph.

Glacier du Forno, Engadine. A colored photograph.

Niagara Falls. A photograph.

"You shall go to the ball, Cinderella." A photograph.

The Weisshorn, Alps. A photograph.

The Roll Call in the Crimean War. A photogravure from a painting by Elizabeth Thompson.

A Glass of Roses. Chromolithograph.

"Vive l'Empereur!" Charge of the 4th Huzzars. A colored photogravure. This picture was engraved directly from the painting, and retouched by the artist himself, Edouard Detaille.

The Battle of Shiloh. Aquarelle print, by Prang, from a painting by Thulstrup.

Merrimac and Monitor. Aquarelle print, by Prang, from a painting by J. O. Davidson.

The Battle of Chattanooga. Aquarelle print, by Prang, from a painting by Thulstrup.

The Boyhood of Lincoln. A fine chromo from a painting by Eastman Johnson.

Blue Spring in the Yellowstone Lower Geyser Basin. Chromolithograph.

Farragut in the Rigging, at the Capture of Mobile Bay. Chromolithograph

Tower of Tower Falls, Yosemite Valley. Chromolithograph.

Summit of Sierra Nevada. Chromolithograph.

Three Swiss views in one frame. Colored photograph.

Bridal Veil Falls, Yosemite Valley. Chromolithograph.

Statue of Charles Sumner.

Corlett School.

Lady of Angels	Photogravure
View of the Alps	Colored photogravure
Solitude. A landscape	Etching
The Night Watch	Artotype
The Angelus	Etching
The Soul's Awakening	Photogravure
Venice	Colored photogravure
Pharaoh's Horses	Artotype
Quivering Aspens	Etching
Windsor Castle	Etching
Moonrise	Artotype

Harvard School.

OIL PAINTING.

Madonna of the Chair. Raphael	Copied from the original

ETCHINGS.

Abingdon	
Cupid's Bath	Wilfred Ball
Hawthornden, near Edinburgh, Scotland. The home of the poet Drummond. Artist's proof.	David Law
Lion's Head.	
Mont St. Michel. Artist's proof.	Gautier Lucien
Portrait of Raphael.	
Ship of the Desert. Remarque proof.	L. D. Eldred
St. Paul's. Remarque proof	Pierre Mallet
Where Shakespeare Sleeps. Remarque proof.	Pierre Mallet

MEZZOTINT.

Portrait of William Drummond	Engraving

PHOTOGRAVURES.

Sark	Edwin Douglass
An August Morning with Farragut.	
"At evening time there shall be light."	
Forest Scene.	
Peterboro' Cathedral	After an etching by Haig
Repose in Egypt	By Rapine after Merson
Scotland Forever.	
Snow Scene	After an etching by Edward Slocombe
Summer.	
The Bridge.	
The Falconer.	
The Last Prayer.	T. L. Gerome
The Mill Stream.	
The Pine Forest.	
The Two Majesties	Colored
"When twilight fades beneath the moon away."	

PHOTOGRAPHS.

Alpine Forest in Winter	Colored
Christ Before Pilate	After Munkacsy
Doge's Palace, Venice	Colored
Glacier Du Roseg, Pres Pontresina, Engadine	Colored
The Rapids.	

CHROMOLITHOGRAPHS.

The Battle of Fredericksburg.
The Domes of the Yosemite Valley.

COLORED PRINT.

Fabiola	J. Henner

Peabody School.

The Creation. Photograph from a painting by Berne Jones showing the figure of an angel holding a great sphere.

The Castle of Chillon. An engraving from a painting by Robert Schultze showing the situation of the castle on Lake Geneva with the Alps opposite.

The Kearsarge and the Alabama. An aquarelle facsimile colored print, by L. Prang & Co., of a picture by J. O. Davidson.

Christ among the Doctors. A chromolithograph printed by Herr Greve of Berlin and copied from a water color by Herr Kaiser showing a part of the frieze painted by Boccaccio Boccaccino, A. D., 1514–18, in the Cathedral of Cremona.

The Pine Trees. A monotype of a painting by Bicknell.

Charlotte Corday in Prison. Heliotype.

The Three Fates. Engraving from a painting by Michael Angelo.

Falaise au Bourg d'Ault. An etching of an engraving by Valentin Foulquier.

Quatre Bras. A photogravure of the armies on the field of battle at Waterloo.

Cathedral at Seville. Lithograph.

Approach to Venice. Heliotype from painting by J. M. W. Turner.

The New Apprentice. Photograph.

A Flaw in the Title. Photograph from painting by J. H. Caliga.

High Life. A heliotype of the engraving by C. C. Hollyer, from a painting by Landseer in 1829. It represents a deerhound in the chamber of its master, a knight of the olden times.

The Gypsy Maid. Heliotype.

An Humble Servant. A heliotype from the painting by Rosa Bonheur It represents a donkey's head.

The Prisoners. A heliotype representing a little girl and her staghound that are kept in doors by a snowstorm.

Putnam School.

The Lost Chord. Artist's proof etching, 23x16. R. Cleveland Coxe.
Alpine Forest in Winter. Photochrom, 10x8.
Angels' Heads. Etching, 10x8. After Sir Joshua Reynolds.
Dash around the Lightship. Aquarelle, 16x24. L. Prang & Co. J. O. Davidson.
The Choir, Westminster Abbey. Artist's proof etching, 32x22.
Albrechtsburg in Meissen. Etching by Paul Bette, 34x25. From painting by B. Maunfeld.
Battle of Port Hudson. Passing the river batteries. Aquarelle facsimile, 15x21. L. Prang & Co. J. O. Davidson.
Battle of Antietam. Attack on the rebel centre at Dunker Church. Aquarelle facsimile, 15x21. L. Prang & Co. Thulstrup.
Grant from West Point to Appomattox. Portrait and scenes in his life. Aquarelle, 26x19. L. Prang & Co. Thulstrup.
Nature's White Robe. Country scene in winter. Etching, 21x13. Edward Slocombe.
1814. Artotype, 13x17. After the painting by Meissonier.
An Old Monarch. Lion's head. Artotype, 16x13. After Rosa Bonheur.
Bowl of Roses. Aquarelle, 15x21. L. Prang & Co.
The Princes in the Tower. Artotype, 16x10. After Millais.
Winter Scene. Artotype, 9x18.
Horseshoe Falls from Goat Island. Photograph, 21x16.
Venice. The Campanile and the Doge's Palace. Colored photograph, 17x21.
German Forest Scene. Artotype, 14x17.
Red and Pink Roses. Chromolithograph, 15x22. After M. Silsbee.
Yosemite Valley. Looking eastward from the Mariposa Trail. Chromo, 7x14. L. Prang & Co. After John R. Key.
Lauterbrunnen, et le Staubbach, Oberland Bernois. Photochrom, 16x21.
Fallen to Decay. Artist's proof etching by A. Gravier, 10x20. James E. Grace.
Te Deum Laudamus, Madonna della Stella, Gloria in Excelsis. Three colored photographs, each 5x13. After Fra Angelico.
William Tell's Chapel. Photogravure, 11x17. Robert Schultze.
Breton Cattle. Artotype, 10x14. After Rosa Bonheur.
Cathedral at Milan. Colored photograph, 17x21.
Valley of Babbling Waters, Southern Utah. Chromo, 10x14. L. Prang & Co. After Thomas Moran.
Roma, Piazza e Basilica di S. Pietro. Photograph, 27x66.

Shepard School.

The Night Watch. Rivière. A photogravure of lions prowling among the dark shadows of a ruined temple.
Alpine Forest in Winter. Colored photograph.

Great Salt Lake. Chromolithograph.

The Yosemite Valley. A colored lithograph showing the curious cliff formation.

Medea. A large photograph of the painting by N. Sichel.

Lake Avernus and the Golden Bough. Artist's proof etching, by David Law, from J. M. W. Turner.

The Vintage Festival. A photogravure.

The Thin Red Line. Photogravure. A scene from one of the battles between the French under Napoleon and the Allied Powers.

St. Mark's Square in Venice. A colored photograph.

Launching of the Life Boat. A chromolithograph.

Old Street in Halifax, by F. Leo Hunter. A remark proof etching. A winter scene.

Hot Springs of the Yellowstone. Chromolithograph.

Five small Swiss views. Colored photographs in one frame.

Charlecote. An etching by Slocombe, of an English country road crossing a brook, and entering an old park.

The Run of the Season. A photogravure. The gathering of the hunters and hounds just before the chase.

Birds on the Telegraph Wire. A photograph.

The Jersey Family. A photogravure.

The Arsenal at Venice. A colored photograph.

The Cathedral at Seville. A photogravure.

The Pied Piper of Hamelin. Photogravure.

Queen Victoria. A large lithographic portrait with a facsimile of her autograph.

Old Faithful. A photograph of the famous geyser of the Yellowstone.

Charles I. on His Way to Execution. A large colored English print, a copy of the painting by Crofts.

The Bloody Angle at the Battle of Spottsylvania. One of Prang's colored war prints.

Capitol at Washington. A large photograph. Presented by Mr. George P. Johnson.

Thorndike School.

Sistine Madonna. Raphael, 1482–1519	Chromolithograph
Mountain of the Holy Cross	Chromolithograph
Capture of Fort Fisher. J. O. Davidson	Aquarelle facsimile print
Siege of Atlanta. Thulstrup.	Aquarelle facsimile print
Edinburgh. David Law.	Etching
Flowers.	Chromolithograph
Death of Lord Nelson	Colored reproduction
The Jersey Mother. Edwin Douglass	Reproduction
North Chancel Aisle, Westminster. A. H. Haig.	Etching
Yosemite Valley. Published by Prang	Chromo
Mont St. Michel. Delauney.	Artist's proof etching

The Reaper. J. T. Bentley	Etching
Tower Falls and Sulphur Mountain. Published by Prang.	Chromo
The Pine Forest	Photogravure
Morning	Photogravure
Village de Mürren et les Alpes.	Colored photograph
St. Mark's Cathedral and Doge's Palace, Venice	Colored photograph
Waves	Colored photograph
Sheep. Rosa Bonheur	Reproduction
The Wanderer of the Desert	Etching
Pear Tree After a Snowfall	Colored photograph
The Garden of the Gods	Photograph
Lions. Herbert Dicksee	Etching
Three Swiss views in one frame	Colored photographs
Evening in September	Photogravure

Washington School.

Franklin at the Court of France. Colored engraving. The sad history in brief of each person of the court is given in the handwriting of the donor in a beautifully bound volume to accompany the picture.

The Coronation of Queen Victoria. Steel engraving.

Sheridan's Final Charge at Winchester. Chromolithograph.

Where the Poplars Kiss the Sky. Photogravure.

Twilight. Photogravure. Representing a quaint stone church with truncated tower, embowered in trees on the bank of a quietly running river.

Littleton on Thames. Photogravure.

Old Stone Steps at Capri. Photogravure.

Mary Queen of Scots. Etching.

Minerva's Terrace. Yellowstone Valley, showing the wonderful limestone formation. Photograph.

Great Falls. Snake River, Idaho. Chromolithograph.

The Rialto. Colored photograph.

Cathedral of Lausanne. Etching.

Fingal's Cave. Chromolithograph.

St. Mary's Cathedral. Bristol, England, from whose lofty tower shot was first formed. Etching.

Wengern Alp. Showing a typical Swiss cottage. Chromolithograph

Chapel of William Tell. At Lake Lucerne. Chromolithograph.

Bushrod Washington. Engraving.

Bay of Naples and Mt. Vesuvius. Chromolithograph.

Capitol at Washington. Photogravure.

Washington Monument. Photograph.

Napoleon. On the deck of the warship Bellerophon, on his way into exile. Photogravure.

Castle of Chillon. Etching.

Alpine Forest. Colored photograph.

Coat of Arms. Washington family for seven generations. Chromolithograph.

Forward on ! Forward on ! Lithograph. A ride to the hounds in the Isle of Wight.

Washington entering New York. Chromolithograph.

Webster School.

Aurora. Artotype. Guido Reni.

Notre Dame. Etching. Delauney.

Niagara Rapids. Photograph.

A Chariot Race. Artotype. C. Ademollo.

Edward the Confessor's Chapel. Etching. Artist's proof. A. H. Haig.

Sheridan's Ride. Aquarelle facsimile. Thulstrup.

Edward the Confessor's Chapel. Etching. Artist's proof. A. H. Haig.

The Dance of the Muses. Artotype.

The Life Boat. Photogravure. A. Morlon.

Trees Snow-Laden. Colored photograph.

Alcazar at Segovia. Etching. Artist's proof. A. H. Haig.

Doge's Palace. Colored Photograph.

Lower Yellowstone Range. Chromolithograph.

Scotch Cattle. Photogravure. Rosa Bonheur.

Jersey. Photogravure. Edwin Douglass.

Columbus at the Court of Spain. Chromolithograph. Reproduction. V. Brozik.

Capture of New Orleans. Aquarelle facsimile. J. O. Davidson.

A Giant Oak. Photogravure. Julian Marck.

Lac de Sils. Engadine. Colored photograph.

Moonrise. Photogravure. Smith Hald.

Grand Cañon of the Yellowstone. Photograph.

1807. Photogravure. Meissonier.

King of the Desert. Etching. Artist's proof. Evert Van Muyden.

Big Tree. Photogravure. Henry Phlefeld.

Valley in Brittany. Photogravure. C. Bernier.

Excelsior Geyser. Photograph.

Where Branches Meet. Photogravure.

Morning Parade at London Tower. Colored photogravure. Edouard Detaille.

Pastoral Farms. Photogravure.

The Three Graces. Etching. McWhirter.

The Old Homestead. Photogravure. Horace Hooper.

Heroic Bust of Governor John Winthrop.

GIFTS FROM OTHER FRIENDS.

The Coliseum. Large photograph. Presented by Mr. John Hopewell, Jr.

The Roman Forum. Large photograph. Presented by Mr. John Hopewell, Jr.

Twenty-seven miscellaneous volumes for the school library. Presented by Mr. John Hopewell, Jr.

Houghton, Mifflin & Co. have presented fifty-five volumes to the school library.

William A. Munroe, Esq. has presented forty-six volumes to the school library.

The class graduating in June, 1892, presented forty volumes to the school library and a collection of minerals to the cabinet.

The graduating class of 1893 has presented twenty volumes to the school library, a collection of minerals to the cabinet, life size busts of Shakespeare and Franklin and two bas-reliefs.

In addition to the above, individuals have contributed an aggregate of forty volumes.

Wellington School.

Twilight. Photogravure. L. Farquharson. Copied by Fred Slocombe.
Warwick Castle. Photogravure.
The Return from the Fair. Photogravure. An Italian scene.
A Farm in the New Forest. Photogravure. Copied by Fred Slocombe.
Noon and Night. Photogravures.
The Boyhood of Lincoln. Chromo. E. Johnson.
Fording the River. Photogravure. From painting by Rosa Bonheur.
Persepolis. Photogravure. Jerome.
Wellington and Blucher. Engraving. Maclise. Showing the meeting after the battle of Waterloo. Engraved by Lumb Stocks, R. A.
Alderney. Photogravure. Edwin Douglass.
Death of Nelson at the Battle of Trafalgar. Maclise. Engraved by C. W. Sharp.
Great Trees in Calavera's Grove, California. Chromolithograph.
Battle of Gettysburg. Chromolithograph. Showing repulse of Pickett's charge.
Battle of Mobile Bay. Chromolithograph.
Grand Cañon of the Yellowstone. Chromolithograph.
Young Neapolitan. Photograph. Gustav Richter.
Entrance to Cathedral, Strasburg. Chromo. Myles Hoel, 1668. Copied by Festo and Massire.
Venice. Colored photograph. Showing palace by moonlight.
La Mer de Glace. Colored photograph.
Niagara. Photograph.
Three Swiss views in one frame. Colored photographs.
Ocean by Moonlight. Chromolithograph. Alex. Harrison.
Alpine Forest in Winter. Colored photograph.
Oasis of Filiach, Algiers. Chromolithograph. R. Swain Gifford.
Study of Pink Roses. Chromolithograph. Eliza F. Parker.
Study of Yellow Roses. Chromolithograph.
Sistine Madonna. Chromo. Raphael, 1518.

GIFTS FROM OTHER FRIENDS.

A set of Frye's relief maps. Presented by Dr. W. W. Wellington.

Equestrian Statue of Bartolomeo Colleoni, before the church of S S Giovanni e Paolo, Venice. Designed by Verocchio. Solar print. Presented by Mrs. Ellen A. Goodwin.

Eight columns of the Temple of Saturn in the Roman Forum. Solar print. Presented by Mrs. Ellen A. Goodwin.

Three columns of the Temple of Vespasian in the Roman Forum. Solar print. Presented by Mrs. Ellen A. Goodwin.

LATIN SCHOOL.

Acropolis. Photogravure. Presented by Mr. Alfred C. Fuller.

Roman Forum. Colored photograph. Presented by Mr. Alfred C. Fuller.

William A. Munroe, Esq. has presented to the school a collection of over five hundred geological and mineralogical specimens, also seventeen books on geology, mineralogy, and paleontology.

ENGLISH HIGH SCHOOL.

The pictures in the possession of the English high school, recently presented by Mr. Alfred C. Fuller, are heliogravures from copies of Romanino's (1490–1560, A. D.) frescoes in the castle of Malpaga, near Bergamo, in Italy. These pictures are published by the Arundel Society, and are especially valuable for the light they throw on the dress, manners, and entertainments of the times to which they refer. The subjects are all related and are as follows : The Arrival of King Christian at the Castle of Malpaga, the Tournament, the Banquet, the Distribution of Liveries, and the Departure of King Christian. A bust of Venus has also been presented by Mr. Fuller. In addition, he has left with the school a valuable loan collection of armor, vases, pictures, old books, and bric-a-brac. Among the books is a copy of the first edition of the Bishop's Bible, published in black letter in 1568.

GIFTS FROM OTHER FRIENDS.

A bust of Shakespeare has been presented to the school by the class of 1891. A new concert grand piano, made by Chickering & Sons, has been obtained by subscription and placed in the school hall. Special thanks are due to Mr. John Hopewell, Jr., for his gift of money which formed the nucleus of the piano fund, to William A. Munroe, Esq., chairman of the high school committee, for an equal gift, and to Mr. Albert M. Barnes for his excellent judgment in selecting and purchasing the instrument. The most of the money came in small sums from the pupils themselves and their friends.

GIFTS OF FLAGS AND FLAGSTAFFS.

During the past four years flags and flagstaffs have been given to the schools as follows:

Shepard School, flag.	Mr. Samuel F. Woodbridge
Harvard School, flags. (2)	Mr. James L. Paine
Allston School, flag.	Mr. James Mellen
Sargent School, flag.	Mr. Edward H. Norton
Washington School, flag.	Hon. Charles A. Saunders
Peabody School, flag.	Mr. Charles A. Mason
Webster School, flag.	Bought by subscription
Wellington School, flag and staff.	William H. Smart Post 30, G. A. R.
Agassiz School, flag and staff.	Mr. Thomas Stearns
Putnam School, flag and staff.	Mr. William Stevens
Thorndike School, flag and staff.	Mr. Francis Fitzpatrick
Morse School, flag and staff.	Hon. Asa P. Morse
English High School, flag.	Charles Beck Post 56, G. A. R.
Boardman School, flag and staff.	Mr. John Hopewell, Jr.
Tarbell School, flag and staff.	Mr. John Hopewell, Jr.
Willard School, flag and staff.	Mr. Henry C. Hopewell
Wyman School, flag.	Mr. Henry D. Yerxa
Stearns School, flag.	The Cambridge branch of the Loyal Women of American Liberty.

ANOTHER GIFT.

In 1890 Mr. Philip Nutting gave a tablet for the Washington school. It was inserted in the front wall of the building. The inscription is as follows:

WASHINGTON SCHOOL

Descendant of the "Faire Grammar School"

First School in Cambridge.

In School Committee, Feb. 16, 1893.

Voted, That the report prepared and read by the superintendent be adopted as the annual report of the school committee for 1892, and that the secretary be authorized to append the names of the members of the committee thereto.

SANFORD B. HUBBARD,
Secretary.

Members of the School Committee for 1892.

ALPHEUS B. ALGER, *Chairman ex officio.*

ELLEN A. GOODWIN,
WILLIAM TAGGARD PIPER,
ALBERT BUSHNELL HART,
PHEBE M. KENDALL,
JAMES L. PAINE,
ROBERT O. FULLER,
ANNE CLARK STEWART,
EDWARD B. MALLEY,
WILLIAM H. CLANCY,
*ASA P. MORSE,
CHARLES F. WYMAN,
FRANCIS V. B. KERN,
†WILLIAM A. MUNROE,
‡WILLIAM A. START,
GEORGE P. JOHNSON,
CAROLYN P. CHASE,
§FREDERICK W. TAYLOR.

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*Resigned, March 17.
†Elected, April 19.
‡Resigned, Jan. 19.
§Elected, Feb. 9.

FRANCIS COGSWELL,
Superintendent of Public Schools.

APPENDIX.

COURSE OF STUDY FOR THE CAMBRIDGE LATIN SCHOOL.

The course of study is almost wholly decided, not only in the subjects studied, and the extent in which they are studied, but also in the place in the curriculum and the text-books used, by the requirements for admission to Harvard College. The course is also of necessity slightly varied, as the ability of the class varies. What is not done in one year must be done in the next.

Fifth Class. (First Year.)

Latin, five times a week during the year. Collar and Daniell's Book for Beginners, entire.

Algebra, through Affected Quadratic Equations, five times a week during the year; the Metric System.

History of England, three times a week for the first six months.

English, three times a week during the year. Chittenden's English Composition; Scott's Lady of the Lake; written exercises.

Physiology and Hygiene, three times a week the last four months.

Fourth Class. (Second Year.)

Latin, five times a week during the year. Nepos's Lives of Miltiades and Themistocles; Cæsar's Gallic War, Four Books; Allen and Greenough's Latin Grammar.

French, four times a week during the year. Böcher's Otto's French Grammar, Part I.; Worman's First French Book; Peppino; Siège de Berlin.

or

German, four times a week during the year. Half of Collar's Eysenbach's Lessons; Worman's First German Book; Höher als die Kirche; Grimm's Märchen.

Geometry, five times a week for the first five months.

Physics, five times a week for the last five months.

English, two exercises a week for the year. Shakespeare's Midsummer-Night's Dream; George Eliot's Silas Marner; Webster's First Bunker Hill Oration; Longfellow's Evangeline; written exercises.

Third Class. (Third Year.)

Latin, five times a week during the year. Cæsar's Gallic War for the first two months; Virgil's Æneid for the last eight months, Books I., II., III., IV.; Latin Grammar.

Greek, five times a week during the year. White's Greek Lessons, fifty-one lessons. Chapters I., II., III., of Book I. of Xenophon's Anabasis.

French, four times a week during the year. Böcher's Otto's Grammar, Part II.; Le Conscrit; La Tulipe Noire; French Composition (Anecdotes); Memorizing of Anecdotes; sight reading.

or

German, four times a week during the year. Collar's Eysenbach's Lessons; Die Jungfrau von Orleans; Minna von Barnhelm.

English, twice a week during the year. Shakespeare's Merchant of Venice and Twelfth Night; Sir Roger de Coverley Papers; Webster's First Bunker Hill Oration. Written essays on each of these works.

Some of these books are the same as those for the fourth class, because these are required of this class by Harvard College, and they have not read them before.

Second Class. (Fourth Year.)

Latin, five times a week during the year. Virgil's Æneid, Books V., VI., VII.; Nepos's Lives of Miltiades, Themistocles, Aristides, Pausanius, Cimon, Alcibiades, Lysander, Thrasybulus; Sallust's Catiline; Jones's Latin Composition, forty exercises; Latin Grammar. Written exercises in Latin Grammar, or Latin at sight, once a week.

Greek, five times a week during the year. Goodwin's Greek Reader to Page 110; Greek Grammar; Jones's Greek Composition, ten exercises. Written exercises in Greek Grammar, or Greek at sight, once a week the last four months.

French, every other day during the year. Mlle. de la Seiglière; L'Avare; Les Femmes Savantes; French Composition (Anecdotes); sight reading; French Grammar;

or

German, every other day during the year. Peter Schlemihl; Wilhelm Tell; Hermann und Dorothea; Harris's German Composition.

Physics, every other day during the year. The forty experiments required for admission to Harvard College.

Ancient History, Greece and Rome, every other day during the year.

Algebra, every other day during the year. Written examination once a week during the last five months.

English, once a week during the year. Shakespeare's Julius Cæsar; Macaulay's Essay on Lord Chatham; Irving's Sketch Book. Written essays on each these of works.

First Class. (Fifth Year.)

Latin, five times a week during the year. Virgil's Æneid, Books VIII., IX., X., XI., XII., and the Bucolics and the Georgics; Cicero, twelve orations, of which two are at sight. Also written exercises twice a week during the year in Latin Composition (including the review of Nepos for written work), or Latin at sight.

Greek, five times a week during the year. Homer I., II., III., entire, and the other selection in Johnson's Iliad; Jones's Greek Composition, last thirty exercises. Also written exercises once a week during the year in prose composition, Greek Grammar, or Greek at sight.

Geometry, every day during the first five months; every other day the last five months. Also written exercises, including original demonstrations, once a week during the year.

English, every other day during the year. This includes reading (for the first time, or in review) all the books in English required for admission to Harvard College. For 1893 these are: Shakespeare's Julius Cæsar and Twelfth Night, Scott's Marmion, Longfellow's Courtship of Miles Standish, the Sir Roger de Coverley Papers in the Spectator, Macaulay's second Essay on the Earl of Chatham, Emerson's American Scholar, Irving's Sketch Book, Scott's Ivanhoe, Dickens's David Copperfield. Written essays on each of these works; correction of false syntax.

This course of study gives for the first, third, fourth, and fifth classes four recitations a day Mondays, and three a day the rest of the week; for the second class, five on Mondays, and four a day for the rest of the week. The extra time assigned to the second class is necessary for a proper preparation for the requirements for admission to Harvard College in the preliminary examination. Those who succeed in passing the "Eight-Hour Requirements" in their preliminaries have less work left for the last year. Those who fail to pass any one or more of their preliminaries have as hard a year the last as the last but one. Some prefer to put a part of the work of the last year but one into the last year. Those who are good students and willing to work can complete the five years' course in four years. In the class that entered college last June there were four such; in the present first class there are three; in the second class, three; in the third class, two; and in the fifth class, five, who are trying to complete the course in four years. Those who do this usually stand at, or near, the head of their classes.

Text-Books in the Latin School.

English Literature. Chittenden's English Composition; Lockwood's Lessons in English; Strang's Exercises in English; Evangeline; Courtship of Miles Standish; Marmion; The Abbot; the Lady of the Lake; As You Like It; Julius Cæsar; Merchant of Venice; Twelfth Night; The House of the Seven Gables; The Alhambra; Silas Marner; Webster's First Bunker Hill Oration; Sir Roger de Coverley Papers; Sketch Book; Macaulay's Essay on the Earl of Chatham; Emerson's American Scholar; Ivanhoe; David Copperfield; and other books required for admission to College.

French. Worman's First French Book; Otto's French Grammar; La Petite Grammaire; Blouet's Primer of French Composition; Grandgent's Materials for French Composition; Gasc's French Dictionary; L'Abbé Constantin; L'Avare; La Belle Nivernaise; La Chrestomathie Moderne; La Chute; Le Conscrit; Les Femmes Savantes; Le Roi des Montagnes; Le Siége de Berlin; La Tulipe Noire; Mlle. de la Seiglière; Mlle. Solange; Peppino.

German. Worman's First German Book; Collar's Eysenbach's German Lessons; Köhler's German Dictionary; Höher als die Kirche; Die Jungfrau von Orleans; Grimm's Tales; Minna von Barnhelm; Peter Schlemihl; Wilhelm Tell; Hermann und Dorothea; Harris's German Composition; Freytag's Aus neuer Zeit; Immensee.

Latin. Collar & Daniell's Beginner's Latin Book; Collar's Latin Composition; Jones's Latin Composition; Allen & Greenough's Latin Grammar; Allen & Greenough's Cæsar; Allen & Greenough's Cicero; Allen & Greenough's Ovid; Allen & Greenough's Virgil; Chase & Stuart's Cornelius Nepos, and Sallust. For sight reading, Harper's text editions of Cæsar, Cicero, and Virgil.

Greek. White's Greek Lessons; Jones's Greek Composition; Goodwin's Greek Grammar and Reader; Crosby's Lexicon to the Anabasis; Homeric Lexicon; Liddell & Scott's Lexicon; Johnson's Iliad; Anabasis; Hellenica; Cyropædia.

History. Montgomery's History of England; Creighton's History of Rome; Leighton's History of Rome; Pennell's History of Greece; Oman's History of Greece; Sheldon's Studies in Greek and Roman History; Allen's Short History of the Roman People.

Mathematics. Bradbury's Elementary Algebra; Bradbury and Emery's Academic Algebra; Bradbury's Academic Geometry; Bradbury's Trigonometry and Surveying.

Music. Harmony in Praise; Codas.

Sciences. Harvard Descriptive List of Experiments in Physics; Hall & Bergen's Physics; Gage's Introduction to Physical Science; Hunt's Hygiene.

Miscellaneous. Edward's Mythology; Harvard Examination Papers.

COURSE OF STUDY FOR THE ENGLISH HIGH SCHOOL.

The course of study pursued by the English high school is substantially that ordered by the school committee in 1886 at the time of the division of the Cambridge high school.

The outline here given represents the course in its present state.

First Year.— Class IV.

	Studies.	Months.	Exercises per week.
1	Latin	10	5
2	Commercial Arithmetic and Business Forms	10	5
3	Algebra	10	5
4	History of England	6	3
5	Physiology and Hygiene (after History)	4	3
6	English Composition	10	2
7	American Prose Writers	5	1
8	American Poets	5	1
9	Drawing	10	1

An option is offered between the first two numbers, Latin and arithmetic. The other numbers are prescribed for all.

The prose writers studied are Hawthorne, Irving, Longfellow, Whittier, Holmes, Lowell, Thoreau, and Emerson ; the poets studied are Longfellow, Whittier, Bryant, Holmes, Lowell, and Emerson.

The English of the first year, apart from the literature read, is based on Chittenden's Elements of English Composition, and covers the following branches : Punctuation, capitals, the combination and transformation of elements, the principles of expression, the figures of speech, and exercises in development, reproduction, paraphrasing, composition, and letter-writing.

Second Year.— Class III.

	Studies.	Months.	Exercises per week.
1	Latin	10	5
2	Book-Keeping and the Laws of Business	10	5
3	Geometry	6	5
4	English (after Geometry)	4	5
5	Physics	10	5
6	English Literature	10	1

The option between Latin and commercial subjects is continued, pupils taking number one or number two in accordance with their decision of the preceding year.

The English of the second year, based on Lockwood's Lessons in English, includes the following: A review, in new forms, of the first year's work, a brief history of the English language, its Anglo-Saxon and classical elements, and the more obvious properties of diction.

The works studied in English literature are Hawthorne's Twice-Told Tales, Dickens's Christmas Stories, Scott's Lady of the Lake, and Ivanhoe.

The course in physics includes laboratory work by the pupils, experiments by the teacher, records of observation and inferences, and the usual recitation and examination methods.

Third Year.— Class II.

	Studies.	Months.	Exercises per week.
1	Latin	10	5
2	Preparatory Studies for Scientific Schools	10	5
3	French	10	5
4	German	10	5
5	Chemistry	10	3
6	Botany	10	2
7	English Literature	10	1

Number two may be taken instead of number one (Latin). This alternative is intended for pupils preparing for the Massachusetts Institute of Technology, the Lawrence Scientific School, and the science courses of the several colleges. It includes reviews of algebra and geometry, with advanced work in both, also reviews of arithmetic, and is designed to prepare pupils for their preliminary examinations.

There is also an option between number three (French) and number four (German). Pupils will not be permitted to take both in addition to the other studies that are required unless their previous record indicates that they can do so without detriment to their scholarship or health. Numbers five, six, and seven are required of all. No other options than those authorized by the school committee, and here pointed out, will be permitted.

No provision is made for a commercial course extending beyond the first two years. Pupils who have finished this course, and who desire to continue their studies two years longer and receive a diploma, may do so. As they are not prepared to enter upon number one (Latin) for this year, and may not wish, since they are not candidates for higher institutions, to take number two (the alternative offered for number one), they may, for another alternative, begin Latin with the entering class. They will take for their other studies either number three or number four, and numbers five, six, and seven.

The course in chemistry consists largely in laboratory practice, great importance being attached to skilful manipulation, keen observation, logical reasoning, and the neat, orderly, and accurate recording of work done and results reached. Similar methods, so far as the nature of the subject permits, are followed in the botanical work of the year.

The literature of this year includes Goldsmith's Deserted Village and Traveller, Gray's Elegy in a Country Churchyard, Addison's Sir Roger De Coverley Papers, Dickens's Tale of Two Cities, and Scott's Quentin Durward.

Fourth Year.— Class I.

	Studies.	Months.	Exercises per week.
1	Latin (alternating with number two)	10	2 or 3
2	Ancient and Mediæval History . .	10	3 or 2
3	United States History, English Language, and English Literature . .	10	5
4	Mathematics	10	5
5	French	10	5
6	German	10	5
7	Astronomy	6	3
8	Civics	4	3
9	English	10	5

Numbers three and four are designed for those who do not take numbers one and two. Under the English of number three is included practice in English composition; also (for 1893) the critical reading of Shakespeare's Julius Cæsar and Merchant of Venice, Scott's Lady of the Lake, Arnold's Sohrab and Rustum, the Sir Roger de Coverley Papers in the Spectator, Macaulay's second Essay on the Earl of Chatham, Emerson's American Scholar, Irving's Sketch Book, Scott's Abbot, and Dickens's David Copperfield. Number four includes algebra (quadratic equations and series), trigonometry, and solid geometry.

Numbers three and four are prescribed for the final examinations for admission to the Institute of Technology and the Lawrence Scientific School, and are suitable for candidates for higher scientific courses in general.

The option between number five (French) and number six (German) is continued.

The remaining numbers (seven, eight, nine, and ten) are prescribed for all.

Pupils who desire to enter normal schools are organized into a special class, and guided in such reviews as may be needed to prepare them for admissson.

Special study is given (under number nine) to the works of Shakespeare. The plays usually read are Julius Cæsar, The Merchant of Venice, A Midsummer-Night's Dream, and Twelfth Night. In addition, a survey of the field of English literature is made necessarily brief, and general, but with an endeavor to note the more prominent writers and productions in their right relations, one to another, and in their proper historical environment.

In addition to the work prescribed in the foregoing course, special individual literature or rhetorical exercises are required at regular intervals of the lower classes, and, so far as practicable, of the upper also. For this work, the pupils of a room are divided into sections.

The pupil's exercise may be a composition, a talk, a recitation, a declamation, a part in a dialogue or a colloquy, a report of some investigation, or visit, or endeavor to get information, the preparation of a class (or section) paper, or anything else in the line of his taste or power, provided always that the proposed exercise shall meet the teacher's approval.

The exercises may be illustrated by maps, photographs, drawings at the board, quotations,—by anything or in any way that will contribute to a better understanding of the subject presented.

While, in general, it is desirable that the exercise shall hold some relation to the authors and literary works that are studied at the time it is prepared, it is intended to leave a generous margin for whatever individuality the pupil may possess.

The pupil's subject should be reported to the teacher two weeks in advance of presentation.

Drawing and music are regarded as important branches of the course of study. The new building with its commodious drawing-room and hall has made it possible to make a beginning in giving these subjects the attention which, because of changes and lack of facilities, they have not for the past few years received.

While the studies of the English high school are selected and arranged with sole reference to the wants of those who are not to enter college, pupils of good capacity need only to supplement these studies by a moderate amount of outside work to gain admission to such colleges as offer courses that do not include Greek. In this way several graduates of the school have entered college and are maintaining an honorable standing there.

Diplomas are awarded to those only who have honorably completed a four years' course of study or its full equivalent.

The number of recitations per day for other pupils than those in the Manual Training school is usually three, but sometimes four.

But little more than one quarter of the school session is left for the preparation of lessons. Failure to do fair work is generally associated with a lack of proper daily application. For the pupil of average capacity who makes the most of his opportunities at school, two hours of home study each school day will doubtless suffice. If the pupil neglects to study at home, parents may assume that he is not doing at school what he ought. In those rare cases in which faithful pupils are overburdened because of frail health or lack of mental endurance, a a seasonable conference between parents and teachers is desirable.

Cards giving the standing of each pupil will be sent home once in two months for inspection and signature. Scholarship marks are on a scale of 100. A mark above 90 indicates excellent rank; between 80 and 90, good rank; between 70 and 80, fair rank; below 70, poor rank. The fact is recognized, however, that certain elements of a sound scholarly spirit, such as self-reliance, zeal, persistency, conscientiousness, love of truth, cannot adequately be expressed in figures. Those whose marks fall below 60 are reported to the head master for advice, warning, reference to the high school committee, or removal to a lower class. In this connection, attention is called to the following vote of the school committee, passed July 6, 1886:

> Pupils recommended by the committee on examinations and promotions shall be admitted to the Latin school and the English high school in September on trial. Should any of these pupils fail to maintain a suitable rank during the autumn term, that fact shall be reported to the high school committee at the close of said term, and no pupil thus reported shall continue in either school except by a vote of the high school committee.

It is very important that at the beginning the pupil shall thoroughly master principles, and thereby make his later work successful. When this is not done, the recovery of lost grounds is extremely difficult. He is earnestly urged to cultivate from the outset sound habits of work,— such habits as will give him a reputation for promptness, punctuality, order, neatness, system, concentration, thoroughness. Aside from the immediate scholarly results of such habits, they have in their bearing upon the pupil's subsequent life a value that cannot be too highly regarded.

Many of the exercises of the school, like experiments by the teacher, illustrations with the camera, object lessons, much of the laboratory work in science and of the bench work in the shop, are of such a nature that, if the pupil misses them, they cannot be made good to him. Moreover, absence embarrasses the instruction of the class, and thus seriously affects its progress. It is excusable only when it cannot be avoided.

It is presumed that pupils in this school mean to conduct themselves honorably and becomingly,— a presumption justified by the commendable behavior of nearly all. It is the aim of the school to strengthen the sense of propriety, duty, and honor by trusting it. Boys and girls at school are *citizens* as fully as they can ever be (see sect. I., art. XIV., Const. U. S.); it becomes them, therefore, in school and elsewhere, now as throughout their lives, to practice the duties, cultivate the graces, and display the loyalty of good American citizenship. Only in cases of conspicuous failure in conduct will a deportment record be kept.

It is hoped that parents will note carefully such reports as they may receive, and, if they are unsatisfactory, coöperate with teachers in efforts to secure closer attention to duty.

Text-Books in the English High School.

English Literature. Chittenden's English Composition; Lockwood's Lessons in English; Strang's Exercises in English; Swett's Elocution; American Poetry; American Prose; Dickens's Christmas Stories and Tale of Two Cities; Gray's Select Poems; Ivanhoe; Lady of the Lake; Macaulay's Select Essays; Quentin Durward; Julius Cæsar; Macbeth; Merchant of Venice; A Midsummer-Night's Dream; Twelfth Night; Paradise Lost; Sir Roger De Coverley Papers; The Traveller; The Deserted Village; The Princess; Twice-Told Tales; and, in addition, such books as may be prescribed from time to time as prerequisites for admission into the higher scientific schools.

French. Worman's First French Book; Otto's French Grammar; Gasc's French Dictionary; L'Avare; Le Conscrit; Le Siége de Berlin; Peppino; Rècits d'Histoire, Part II; La Belle-Nwernaise; La Chute; Mlle. Solange; L'Abbé Constantin; Mlle. de la Seiglière; Grandgent's Materials for French Composition.

German. Worman's First German Book; Ćollar's Eysenbach's German Lessons; Freytag's Aus neuer Zeit; Köhler's German Dictionary; Höher als die Kirche; Grimm's Tales; Minna Von Barnhelm; Die Jungfrau von Orleans; Immensee; Harris's German Composition.

Latin. Collar & Daniell's Beginner's Latin Book; Allen & Greenough's Latin Grammar; Allen & Greenough's Cæsar; Allen & Greenough's Ovid; Allen & Greenough's Virgil; Chase & Stuart's Cornelius Nepos.

History. Montgomery's History of England; Swinton's Outlines of the World's History.

Mathematics. Bradbury's Elementary Algebra; Bradbury's Academic Algebra; Bradbury's Academic Geometry; Bradbury's Trigonometry and Surveying; Crittenden's Commercial Arithmetic; Duff's Book-Keeping; Wentworth's Elements of Geometry; Wentworth & Hill's Exercises in Arithmetic.

Music. Codas, published by Ginn & Co.

Sciences. Avery's Elements of Natural Philosophy; Gage's Introduction to Physical Science; Hall & Bergen's Physics; Gray's School and Field-Book of Botany; Hunt's Hygiene; Young's Astronomy; Williams's Chemistry.

Miscellaneous. Edward's Mythology; Fiske's Civil Government; Dawes's How We are Governed.

GRAMMAR AND PRIMARY GRADES.

The course of study for these grades is now under revision. It will be in print by the beginning of the next school year.

Text-Books in the Grammar Schools.

Reading Books. Appleton's; Barnes's; Franklin; Harper's; Lippincott's (old and new series); McGuffey's; Sheldon & Co.'s; Stickney's; Swinton's; American Prose; Birds and Bees; Hiawatha; Evangeline and Snow-Bound; Eggleston's First Book in American History; Gilman's Historical Readers; Hawthorne (American Classic Series); Lessons on Manners; Selections from the Sketch-Book; Tanglewood Tales; Grandfather's Chair; Wonder Book; Little Daffydowndilly; Sea-side and Way-side; Wood's Natural History Readers; King's Picturesque Geographical Readers No. 1; Scudder's Fables and Folk Stories; Hans Andersen's Stories; Robinson Crusoe; The King of the Golden River; The Children's Hour; Masterpieces in American Literature.

Dictionaries. Worcester's Comprehensive; Worcester's Common School. For reference, Worcester's and Webster's Unabridged, and Webster's International.

Arithmetics. Bradbury's Eaton's Practical; Colburn's First Lessons; Seaver and Walton's Mental; Franklin Written; Franklin (Cambridge Ed.)

Book-keeping. Meservey's Single Entry.

Geographies. Swinton's Grammar School. For reference, Lippincott's Gazetteer.

Geometry. Hill's Lessons for the Use of Beginners.

Histories. Higginson's and Scudder's.

Language. Hyde's Practical Lessons in English; Metcalf's Language Exercises; Southworth and Goddard's First Lessons in Language; Tweed's Grammar for Common Schools.

Music. Carey's Graded Excrcises; National New Second, New Third and New Fourth Readers; Whitney's Sixth Reader; Mason's New National Music Charts.

Spelling Books. Harrington's; Metcalf's.

Copy Books. Appleton's; Business Standard; Duntonian; Harper's; Payson, Dunton, and Scribner's.

Drawing Books. Prang's Complete Course.

Desk Books. Barnes's Brief History; The Discovery of America, John Fiske; American Citizen, Charles F. Dole; Civil Government, Charles F. Martin; Elements of Civil Government, William A. Mowry; Our Government, Jesse Macy.

Text-Books in the Primary Schools.

Reading Books. The lower numbers of the following series: Appleton's; Barnes's; Franklin; Harper's; Lippincott's (old and new series); McGuffey's; Sheldon & Co.'s; Stickney's; Swinton's; also Book of Fables; Sea-side and Way-side; Interstate Primer; Swinton's Golden Book; Blackboard to Books; Wood's Natural History Readers.

For Teaching Numbers. Badlam's Number Cards; Cambridge Number Cards; Cogswell's Lessons in Number; and for the teacher's use, Wentworth and Reed's First Steps in Number; Peck's Graded Lessons in Number.

Music. Mason's New National Music Charts; Mason's New First Music Reader.

Language and Spelling. Harrington's Spelling-Book, Part I; Hyde's Practical Lessons in English; Badlam's Suggestive Lessons in Language and Reading, for the teacher's use.

A LIST OF GEOGRAPHICAL BOOKS.

[These books are in the Public Library.]

General Geography. Hugh Robert Mill	1367.13
Applied Geography. J. Scott Keltie	1367.10
Handbook of the Earth. Louisa P. Hopkins	1358.10
Geography of Europe. James Sime	1367.19
The Geography of River Systems. William Lawson	1358.12
The Geography of Coast Lines. William Lawson	1358.11
Elementary Geography of the British Isles. Archibald Geikie.	1358.8
Methods and Aids in Geography. Charles F. King	2235.7
A Smaller Commercial Geography. G. C. Chisholm	1367.1
The Story of Our Continent. N. S. Shaler	1356.1
How to Study Geography. F. W. Parker	1367.15
Comparative Geography. Carl Ritter. Trans. by W. L. Gage	1352.24
Suggestions on Teaching Geography. Archibald Geikie	1314.14
Geography of the Dominion of Canada and Newfoundland. Rev. Wm. Parr Greswell	1729.33
Longman's School Geography for North America	1367.1
Picturesque Geographical Readers. Charles F. King. Vol. I. At Home and at School Vol. II. This Continent of Ours.	1367.11
Brooks and Brook Basins. Alexander E. Frye	1367.5
The Child and Nature. Alexander E. Frye	1367.8
The Realm of Nature. J. S. Mill	1356.14
Earthquakes. John Milne	1327.20
Volcanoes. John W. Judd	1317.24
Eclectic Physical Geography. Russell Hinman	1367.12
Elementary Lessons in Physical Geography. A. Geikie	1358.9
The Earth and Man. Arnold Guyot	1343.38
Ice Age in North America. G. F. Wright	1342.28
Corals and Coral Islands. James D. Dana	623.3
Life in Hawaii. Titus Coan	772.12
The Scenery of Scotland. Archibald Geikie	1336.1
Advanced Physiography. John Thornton	1359.14
American Weather. Gen. A. W. Greeley	1366.9
Tornadoes. John P. Finley	1359.16
Elementary Meteorology. R. H. Scott	1367.27
Climate and Weather of India. H. F. Blanford	1354.27
A Treatise on the Winds. W. Ferrel	1354.25
Nature Study for the Common Schools. W. S. Jackman.	1367.21

BOOKS OF SPECIAL VALUE TO TEACHERS.

This list has been prepared at the request of the superintendent of schools by Herbert H. Bates, master of the Cambridge training school. Nearly all of these books are in the public library.

Educational Reformers	Robert Hebert Quick
Lectures on the Science and Art of Education	Joseph Payne
Compayre's Lectures on Pedagogy.	W. H. Payne
Compayre's History of Pedagogy	W. H. Payne
Educational Theories	Oscar Browning
Principles of Education Practically Applied	J. M. Greenwood
Principles and Practice of Teaching	James Johonnot
Lectures on Teaching	J. G. Fitch
John Amos Comenius, His Life and Educational Works	S. S. Laurie
History of Pedagogy, 12 Lectures	W. H. Hailman
Kindergarten Culture	W. H. Hailman
Object Teaching	W. H. Hailman
School Management	Joseph Landon
The Philosophy of Education, or the Principles and Practice of Teaching	T. Tate
Methods of Teaching	John Swett
Education, Intellectual, Moral, and Physical	Herbert Spencer
Outline of Psychology, with Special Reference to the Theory of Education	James Sully
Elements of Pedagogy	Emerson E. White
On Teaching, Its Ends and Means	Henry Calderwood
Mistakes in Teaching	James L. Hughes
Courses and Methods	John T. Prince
Normal Methods of Teaching	Edward Brooks
In the School-room, or Chapters in the Philosophy of Education	John S. Hart
Notes of Talks on Teaching given by Francis W. Parker	Lelia E. Patridge
The Relations of Mind and Brain	Henry Calderwood
Life and Work of Pestalozzi	Krüsi
Theory and Practice of Teaching	David P. Page
Reminiscences of Fröbel von Bülow	Mrs. Mann
Home, Kindergarten, and Primary Schools	Miss Peabody

Early and Infant School Education	James Currie
Common School Education	James Currie
Dialogues of Plato	B. Jowett
The Scholemaster	Roger Ascham
Cyclopædia of Education	Alfred Ewen Fletcher
Education as a Science	Alexander Bain
Methods of Teaching	J. W. Dickinson
Self-Culture	James Freeman Clarke
How to Teach	Henry Kiddle
The Advancement of Learning	Bacon
Object Teaching	J. H. Gladstone
Locke on Education	Robert Hebert Quick
Rousseau's Emile. Translated by	Eleanor Worthington
Pestalozzi's Leonard and Gertrude	Eva Channing
Levana; or, the Doctrine of Education	Jean Paul Friedrich Richter
Ritter's Geographical Studies	William L. Gage
Ritter's Comparative Geography	William L. Gage
European Schools	L. R. Klemm
Chip's from a Teacher's Workshop	L. R. Klemm
Gentle Measures in the Training of the Young	Jacob Abbott
Lectures and Reports on Education	Horace Mann
Life of Horace Mann	Mrs. Mann
School Inspection	D. R. Fearon
A Measure of Method for Pupils, Teachers, and Assistant Masters	Abe Park
The Teacher	J. R. Blackiston
The Life and Correspondence of Thomas Arnold	Dean Stanley
The Pleasures of Life	Sir John Lubbock
Being a Boy	Charles Dudley Warner
Representative Men	Ralph Waldo Emerson
English Traits	Ralph Waldo Emerson
Conduct of Life	Ralph Waldo Emerson
Hero Worship	Carlyle
One Year Abroad	Blanche Willis Howard
Outline Study of Man	Mark Hopkins
Civil Government	John Fiske
Life of Washington	Henry Cabot Lodge
Reports of the Board of Education of Massachusetts.	
Reports of the American Institute of Instruction.	
Science of Language	Max Müller
Chips from a German Workshop	Max Müller
Lectures on the English Language	G. P. Marsh
Reading as a Fine Art	Ernest Legouvé
Choice of Books	Frederic Harrison
The Evolution of Dodd	William Hawley Smith
Practical Hints for Teachers	George Howland
An Italian Schoolboy's Journal	Edmondo de Amicis

Gallus; or, Roman Scenes of the Time of Augustus	W. A. Becker
Charicles; or, Illustrations of the Private Life of Ancient Greeks	W. A. Becker
Hill's Rhetoric	A. S. Hill
The True Order of Studies	Thomas Hill
The Moral Instruction of Children	Felix Adler
Land Marks of English Literature	Henry J. Nicoll
American Literature	Julian Hawthorne and Leonard Lemon
The Hoosier School Boy	Edward Eggleston
Genung's Rhetoric	J. F. Genung
Foundations of Rhetoric	A. S. Hill
Longman's School Composition	David Salmon
Longman's Object Lessons	David Salmon
Habit in Education	Paul Radestock
Trans. by F. A. Caspari. Introduction by G. Stanley Hall.	
Elementary Psychology	James H. Baker
Putnam's Psychology	Daniel Putnam
Lessons in Psychology	J. P. Gordy
The History of Modern Education	Samuel G. Williams
The First Three Years of Childhood	Bernard Perez
Trans. by Alice M. Christie.	
Inventional Geometry	William G. Spencer
Industrial Education	Robert Seidel
Trans. by Margaret K. Smith.	
Methods of Teaching and Studying History	G. Stanley Hall
Lessons in Elementary Mechanics	W. H. Grieve
Spelling Reform from an Educational Point of View	J. H. Gladstone
Locke on the Conduct of the Understanding	T. Fowler
Milton's Tractate on Education A facsimile reprint from the edition of 1673	Oscar Browning

BOOKS FOR GENERAL READING.

In 1876, to awaken a deeper interest in the subject of reading, the superintendent, aided by the teachers, prepared a list of books for the use of the schools. From time to time the list has been revised, and the names of other books added. In these revisions several persons interested in young people, including the librarian of the public library, have rendered important service. While these books are not closely graded, division A includes such as are more or less adopted to older pupils, division C to the younger pupils, and division B to those of intermediate age. Books with catalogue numbers are in the Cambridge public library.

Division A.

Abbott, The. Walter Scott	314.1
Across the Pampas and the Andes. Robert Crawford	786.16
Agassiz, Louis, Life and Correspondence. Mrs. E. C. Agassiz	1135.7
Age of Chivalry. Thos. Bulfinch	333.24
Alaska, A Woman's Trip to. Mrs. S. M. Collis	1718.23
Alhambra, The. Washington Irving	218.10
America, History of. Robert Mackenzie	595.6
American Men of Letters. Ed. by C. Dudley Warner :	
Henry D. Thoreau. Frank B. Sanborn	1115.3
Nathaniel Parker Willis. Henry H. Beers	1131.7
J. Fenimore Cooper. T. R. Lounsbury	1114.16
Noah Webster. Horace E. Scudder	1114.19
Washington Irving. Charles Dudley Warner	1111.3
Margaret Fuller Ossoli. T. W. Higginson	1126.16
American Statesmen. Ed. by John T. Morse, Jr. :	
John Adams. John T. Morse, Jr.	1121.17
Albert Gallatin. John A. Stevens	1134.7
Alexander Hamilton. Henry Cabot Lodge	1111.15
Andrew Jackson. William G. Sumner	1114.8
Daniel Webster. Henry Cabot Lodge	1115.13
James Monroe. D. C. Gilman	1115.8
John C. Calhoun. H. von Holst	1111.17
John Quincy Adams. John T. Morse, Jr.	1111.13
John Randolph. Henry Adams	1114.11
Thomas Jefferson. John T. Morse, Jr.	1114.18
James Madison. Sydney H. Gay	1128.4
John Marshall. Allan B. Magruder	1121.20

Among the Moths and Butterflies. Julia P. Ballard	1353.1
Among the Turks. Cyrus Hamlin	492.13
Ants and their Ways. W. F. White	1312.14
Ants, Bees, and Wasps. Sir John Lubbock	679.15
Arctic Alaska and Siberia. H. L. Aldrich	1717.28
Arctic Explorations. E. K. Kane	716.13
Arne. B. Björnson	733.17
Around the Hub. S. A. Drake	914.13
Around the World with the Blue Jackets. H. E. Rhoades	1724.22
Around the World in Yacht Sunbeam. Mrs. Annie Brassey	498.18
Aurelian. William Ware	345.4
Australian Pictures. H. Willoughby	568.18
Barnaby Rudge. Charles Dickens	393.13
Battlefields and Camp Fires. W. J. Abbott	1469.4
Bedouins of the Euphrates. Lady Anne Blunt	496.22
Beginnings of New England, The. John Fiske	1447.21
Ben Hur. Lew Wallace	378.12
Beric, the Briton. G. A. Henty	1028.1
Birds and Poets. John Burroughs	271.8
Bleak House. Charles Dickens	356.2
Book of American Explorers. T. W. Higginson	493.1
Books and How to Use Them. J. C. Van Dyke	1214.17
Boots and Saddles. Mrs. E. B. Custer	792.5
Boys and Girls in Biology. Mrs. Sarah H. Stevenson	641.12
Boy's Froissart, The Sidney Lanier	448.7
Boy's King Arthur, The Sidney Lanier	923.9
Boy's Mabinogion, The Sidney Lanier	448.20
Boys of '76, The C. C. Coffin	465.19
Boys of '61, The C. C. Coffin	915.4
Bracebridge Hall. Washington Irving	218.8
Bride of Lammermoor. Walter Scott	314.5
By England's Aid. G. A. Henty	1021.47
Building the Nation. C. C. Coffin	697.7
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